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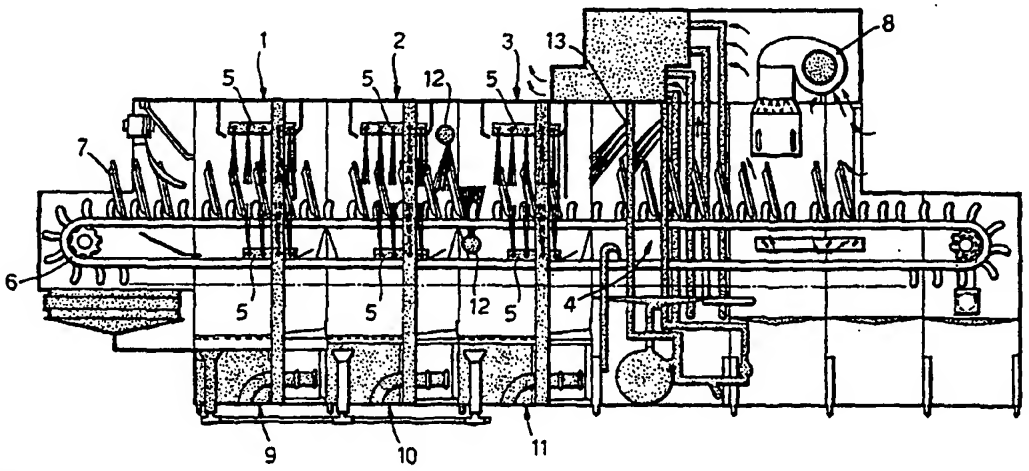

(57) Abstract

A machine dishwashing process for cleaning soiled crockery is provided. The process comprises: (1) optionally prewashing the crockery in a prewash zone; (2) washing the crockery in a wash zone with washing liquor; (3) spraying the crockery from the wash zone with a spraying solution; and (4) rinsing the crockery in a clear washing zone. The washing liquor includes used spraying solution from step (3). The spraying solution has an alkali content of at least 0.8 % by weight. An additive which is substantially free of alkali is supplied to the washing liquor to give a concentration in the washing liquor in the presence of the used spraying solution of at least 0.004 % by weight of complexing agent(s) and/or sequestering agent(s).

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MACHINE DISHWASHING PROCESS

FIELD OF THE INVENTION

The invention relates to a machine dishwashing process for cleaning soiled crockery and to the use of a composition as an additive in such a process.

BACKGROUND TO THE INVENTION

In a typical machine dishwashing process, crockery, such as tableware or cookware, soiled with food or other matter is subjected to a number of treatments in a sequence of zones or cycles. In a main wash zone the soiled crockery is usually sprayed with washing liquor at a pressure sufficient to detach much of the soil present on the crockery. The wash zone may be preceded by a prewash zone in which the crockery is also sprayed with water or with overflow from the wash zone. After the wash zone the crockery is usually rinsed in one or more clear washing zones using fresh water.

Although a major factor in the effectiveness of the wash zone is the mechanical action of the washing liquor on the soiled crockery, in most cases the water pressure exerted is insufficient to detach completely adherent soil such as food residues which have dried on, are firmly adherent, or which contain colouring matter, especially when they contain protein and/or starch. It is also found that a deposit can build up on the crockery over the course of time during successive cleaning operations. In order to make the cleaning of the crockery more effective, it is therefore usual to add into the process a cleaning solution, which is usually supplied to the washing liquor as a concentrated liquid cleaner.

The cleaning solution generally contains alkali, such as sodium hydroxide or potassium hydroxide and is intended to

remove the adherent soil by swelling or partially dissolving it to facilitate rinsing. The cleaning solution also contains complexing agents which are essential for sequestering metal ions present in hard water. Other additives may include bleach to decolourise food residues which contain colouring matter, surfactants to aid binding of dirt particles, and disinfecting components.

EP-A-0282214 discloses an improvement in machine dishwashing processes in which the crockery is washed in the normal way in the main wash zone and thereafter sprayed in a spraying step with a concentrated spraying solution before further rinsing. In the spraying step the crockery is subjected to a low volume/low intensity mist-like application of concentrated cleaning formulation and the crockery is allowed to remain in contact with the cleaning formulation for, say, at least ten seconds before rinsing. The concentrated cleaning formulation contains as essential ingredients both concentrated alkali and concentrated complexing agents.

A disadvantage of the arrangement of EP-A-0282214 is that the amounts of raw materials such as caustic and complexing agents are not easy to control. Typically, fresh water is applied in the rinse stage but concentrated cleaning solutions are supplied during the spraying step and in the main wash zone. In one typical arrangement, the water and other materials in the process pass in cascade-fashion in the rinse zone to prewash zone direction, counter-current to the direction of the transport of the crockery. Because concentrated raw materials are supplied to various stages of the wash cycle it is very difficult, therefore, to measure and control

simply and accurately the amount of raw materials needed to be effective in cleaning the crockery. As a result, to ensure effective cleaning there is a tendency to put in more raw material than would actually be necessary. This adds to the running costs of the process and increases the amount of pollution when the waste water is discharged into the environment. Moreover, because a variety of different water hardness conditions are encountered at the site of use of the dishwashing process, it has hitherto been necessary to offer to users a range of products. The user then has had to select the product with the best combination of water hardness and causticity.

SUMMARY OF THE INVENTION

The present invention provides a machine dishwashing process for cleaning soiled crockery, which comprises:

(1) optionally prewashing the crockery in a prewash zone;

(2) washing the crockery in a wash zone with washing liquor;

(3) spraying the crockery from the wash zone with a spraying solution; and

(4) rinsing the crockery in a clear washing zone;

wherein the washing liquor includes used spraying solution from step (3), the spraying solution has an alkali content of at least 0.8% by weight, and an additive which is substantially free of alkali is supplied to the washing liquor to give a concentration in the washing liquor in the presence of the used spraying solution of at least 0.004% by weight of complexing agent(s) and/or sequestering agent(s).

In accordance with this process most or all of the alkali is supplied as spraying solution in the step of spraying the crockery. Contrary to previous practice it has been

found unnecessary to add additional cleaning solution or alkali to the washing liquor. Instead, spraying solution used in the spraying step is effectively recycled to the washing liquor for the purpose of washing crockery in the main wash zone. This recycling is typically achieved using a wash tank or reservoir in known fashion from which washing liquor may be pumped onto the crockery.

Because the additive supplied to the washing liquor is substantially free of alkali, the concentration of alkali in the washing liquor would be less than 0.001% by weight if no used spraying solution were present in the washing liquor, preferably less than 0.0004% by weight.

In a preferred embodiment, the spraying solution is substantially free of complexing agents and sequestering agents. This separates the tasks of cleaning and of complex formation from one another and reduces the amount of alkalinity which is contained in the washing liquor, thereby reducing the cost of operating the process and the amount of pollution in the waste water. In an alternative embodiment, the additive is supplied to the washing liquor with the spraying solution, preferably in an amount sufficient to prevent scale formation. In this embodiment, the additive may be supplied to the washing liquor by dosing the spraying solution from a separate additive reservoir. In this way, the amounts of spraying solution and additive can be separately controlled. Additive may also be supplied directly to the washing liquor in the wash zone.

The high alkalinity of the cleaner used in the spraying zone ensures complete detachment of the soiling matter, especially starch, protein and the additive facilitates

complete detachment of colouring matter-containing food residues on the crockery, which are then completely rinsed off in the actual washing zone. The additive is also present to prevent the formation of scale inside the dishwashing machine and/or the spraying system.

By separating the tasks of cleaning and of complex formation from one another, operation of the process can occur in a more controlled manner. In particular, it is possible to deal on an individual basis with problems of rinsing, scale formation and cleaning for different purposes by adjusting separately the amount of alkali and complexing and/or sequestering agents present in the process. The amount of alkali in the process may be supplied in accordance with the amount of water supplied for spraying. The amount of alkali in the process as a whole will depend only on the rate of supply of alkali from the spraying solution in the spraying step. This enables a higher degree of control of the process than has hitherto been achieved because the amount of alkali entering the process is regulated in direct response to the entering spraying water and substantially independent of the machine water consumption.

The higher the alkali content in the spraying solution, the more effective the cleaning of the soiled crockery. However, this has to be balanced with the rinsability of the sprayed crockery and the cost of the alkali. Generally, the spraying solution has an alkali content of no more than 1.5%, preferably around 0.75%. It is usual to supply the spraying solution as a concentrated liquid cleaner which is diluted with water at a convenient point prior to spraying. The concentrated liquid cleaner typically has an alkali content of at least 25% by weight

and is diluted to a concentration in the range 4% to 7% by weight for use in the process, advantageously to a concentration of about 5% by weight. The concentrated liquid cleaner generally has an alkali content of no more than 50% by weight, normally in the range 30% to 50% by weight.

In the context of the present invention the term "alkali" encompasses alkalis typical in cleaning detergents and alkali builders such as silicates. Alkalis typical in cleaning detergents include sodium hydroxide, potassium hydroxide, sodium carbonate and potassium carbonate. Sodium hydroxide and/or potassium hydroxide are preferred alkalis for use in the spraying solution.

The washing liquor comprises used spraying solution from the step of spraying the crockery and the additive containing the complexing agent(s) and/or sequestering agent(s). For the avoidance of doubt, it should be noted that there may be more than one complexing agent present in the additive. Similarly, there may be more than one sequestering agent.

Typically, the amount of complexing agent(s) and/or sequestering agent(s) in the washing liquor is sufficient to prevent scale formation in the dishwashing machine and preferably does not exceed 0.05% by weight in the presence of the used spraying solution. Typically, the additive is supplied to the washing liquor in concentrated form to give a dilution in the range 0.02% to 2% by weight, preferably in the range 0.02% to 0.08% by weight. For example, where the washing liquor is present in a wash tank or reservoir, the additive may be supplied to the

tank or reservoir in proportion to the water consumption of the dishwashing machine. Preferably, the additive is supplied to the washing liquor at a dilution in the range 0.03% to 0.05% by weight and may advantageously contain at least 50% by weight of the complexing agent(s) and/or sequestering agent(s). The above additive quantities apply particularly to relatively soft water conditions. Where hard water is used, the quantities may need to be increased accordingly.

The complexing agent(s) and/or sequestering agent(s) may comprise a chelator capable of sequestering metal ions and removing them from activity in solution by forming an inactive complex. Typical chelators include ethylenediamine tetra acetic acid (EDTA), nitrilotriacetic acid (NTA), tripolyphosphates, and their sodium and potassium salts.

The additive may additionally or alternatively comprise a component to inhibit calcium deposition, such as an acrylic or methacrylic polymer and/or phosphonic acids and/or their sodium and/or potassium salts. Both of these polymers and phosphonates act to limit the formation of crystalline growth of calcium, thereby inhibiting its deposition. This can be useful in preventing build up of limescale within the machinery. Typically, acrylic/methacrylic polymers are present in the additive at concentrations of up to 5% by weight. Typically, phosphonic acids and/or phosphonates are also present in the additive at concentrations of up to 5% by weight.

As a further possibility, the additive may comprise a phosphate/polyphosphate or a citrate. Whichever component(s) is selected in the formulation of the

additive, the alkali salt, neutral or acid form of the component may be used.

Each of the compositions supplied to the dishwashing machine may be in the form of a liquid, slurry, powder or solid and the dosing system must be constructed accordingly to bring each composition into solution and into the washtank/spraying system. Preferably, each composition will be formulated to have the highest possible amount of active ingredient in it while still maintaining the most preferred physical form. The use of fillers and other inessential ingredients is preferably avoided so as to prevent any negative environmental impact.

For example, the additive may be supplied as a powder having a composition in the following range: 80 to 90% by weight NTA and/or EDTA and/or tripolyphosphates and/or their potassium or sodium salt; 4 to 9% by weight phosphonic acid and/or its sodium or potassium salt; and 4 to 9% by weight acrylic or methacrylic polymer.

In the spraying step, cleaning solution is preferably applied to the crockery as a fine spray. A fine, gentle mist-like spray is particularly desirable. It is important that substantially the whole of the soiled surface of the crockery is contacted by the sprayed cleaning solution. A contact time of at least three seconds, preferably at least 8 seconds, is generally required for the sprayed cleaning solution to have the desired chemical effect. The concentrated spraying solution must contact the soiled crockery for a time sufficient to allow the soil to swell to enable it to be mechanically removed in the rinsing step. Generally a contact time of no more than 100 seconds is required, preferably ten to twelve seconds. Where the machine

dishwash r is of the conveyor type, the speed of the conveyor belt may be chosen to given an appropriate contact time before the crockery enters the rinse section. As a further feature, the application of the cleaner solution may depend, for example, on a light barrier influenced by crockery present on the conveyor belt.

The present invention further relates to the use of a composition comprising at least 50% by weight of a complexing agent and/or sequestering agent and less than 5% by weight of alkali as an additive in a machine dishwashing process. The composition may be used as described herein to supply concentrated additive to the washing liquor and advantageously contains no more than 5% by weight of alkali, preferably less than 2% by weight.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will now be described in further detail by way of example only and with reference to the accompanying drawings, in which:

FIGURE 1 shows a schematic diagram of a typical conveyor machine dishwasher which is usable in the present invention; and

FIGURE 2 shows a block diagram comparing a cascade system machine dishwasher with a washtank bypass machine dishwasher.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Figure 1 shows a machine dishwasher of the conveyor type which operates by a cascade system. The dishwasher includes prewash zone 1, main wash zone 2, power rinse zone 3 and rinse section 4. Conveyor 6 is used to transport crockery 7 through each of the zones and conventional spraying units 5 are provided to spray the crockery. The crockery is dried with drying unit 8.

Prewash tank 9, main wash tank 10 and power rinse tank 11 are provided to supply to their respective spraying units solutions appropriate to each zone.

In operation, soiled crockery is placed on the conveyor belt and is flooded in the prewash zone 1 with overflow water from the washing zone which is pumped to the spraying unit from prewash tank 9 and may have a temperature of about 40°C. Coarse food residues are thereby rinsed off the crockery. The prewashed crockery enters main wash zone 2 and is sprayed from the spraying unit with washing liquor from main wash tank 10. The washing liquor will include used spraying solution from sprays 12. Additive to the washing liquor is supplied to the main wash tank from a reservoir (not shown). Readily removable soil on the crockery is removed in the main wash zone by a combination of the mechanical action of the spraying and the chemical action of the recycled spraying solution.

The washed crockery now passes under the sprays 12 to remove any difficult remaining soil. Sprays 12 impart a fine mist-like spray of the concentrated spraying solution to the crockery and the speed of the conveyor is adjusted so that the sprayed crockery is not rinsed for at least ten seconds. This enables the concentrated spraying solution to cause the remaining soil to swell and possibly dissolve under the chemical action of the spraying solution. The remaining swollen residues are removed in the power rinse zone 3 by spraying with used rinse water at a temperature of about 65°C from the power rinse tank. The rinse water originates from the final rinse section 4. After th power rinse, fresh water is supplied in spray jets 13 in final rinse section 4 at a temperature

of about 85°C. The crockery is then subjected to drying under drying unit 8.

In accordance with this process, concentrated spraying solution was supplied to sprays 12 at a concentration of 3% by weight and had an alkali content of 30%. No complexing agents and/or sequestering agents were present in the concentrated spraying solution.

Additive was supplied to the washing liquor at a concentration of 0.05% by weight containing 30% by weight EDTA, 30% NTA by weight, 3% by weight acrylic/methacrylic polymers, 2% by weight phosphonates, the balance being water. No free alkali was present in the additive.

Crockery cleaned according to this process was found to be free of soil and free of alkalinity.

Referring to Figure 2, the present invention is equally applicable to machine dishwashers operating by a washtank bypass system. According to this system, the prewash zone is supplied with water from the power rinse zone and not the wash zone. Fresh water is supplied to the wash zone and allowed to drain. The present invention may be applied to this system in essentially the same way as it is applied to the cascade system described above. Sprays for spraying the concentrated spraying solution are situated so that crockery already washed in the wash zone is subsequently sprayed with the concentrated spraying solution.

CLAIMS:

1. A machine dishwashing process for cleaning soiled crockery, which comprises:

(1) optionally prewashing the crockery in a prewash zone;

(2) washing the crockery in a wash zone with washing liquor;

(3) spraying the crockery from the wash zone with a spraying solution; and

(4) rinsing the crockery in a clear washing zone;

wherein the washing liquor includes used spraying solution from step (3), the spraying solution has an alkali content of at least 0.8% by weight, and an additive which is substantially free of alkali is supplied to the washing liquor to give a concentration in the washing liquor in the presence of the used spraying solution of at least 0.004% by weight of complexing agent(s) and/or sequestering agent(s).

2. A process according to claim 1, wherein the spraying solution is substantially free of complexing agents and/or sequestering agents.

3. A process according to claim 1 or claim 2, wherein the spraying solution has an alkali content in the range 0.8% to 1.5% by weight.

4. A process according to any one of claims 1 to 3, wherein the spraying solution is supplied as a concentrated liquid cleaner with an alkali content of at least 25% by weight and diluted in the range 4% to 7% by weight.

5. A process according to any one of the preceding claims, wherein the concentration of alkali in the washing liquor is less than 0.0004% by weight in the absence of the used spraying solution.

6. A process according to any one of the preceding claims, wherein the amount of complexing agent(s) and/or sequestering agent(s) in the washing liquor does not exceed 0.05% by weight in the absence of the used spraying solution.

7. A process according to any one of the preceding claims, wherein the additive is supplied to the washing liquor at a dilution in the range 0.02% to 2% by weight.

8. A process according to claim 7, wherein the additive is supplied to the washing liquor at a dilution in the range 0.03% to 0.05% by weight.

9. A process according to claim 8, wherein the additive contains an amount of complexing agent(s) and/or sequestering agent(s) in the range 30% to 50% by weight.

10. A process according to any one of the preceding claims, wherein the additive further comprises a component to inhibit calcium deposition.

11. A process according to claim 1, wherein the additive is supplied to the washing liquor in step (3) with the spraying solution.

12. Use of a composition comprising at least 50% by weight of a complexing agent and/or sequestering agent and less than 5% by weight of alkali as an additive in a machine dishwashing process.

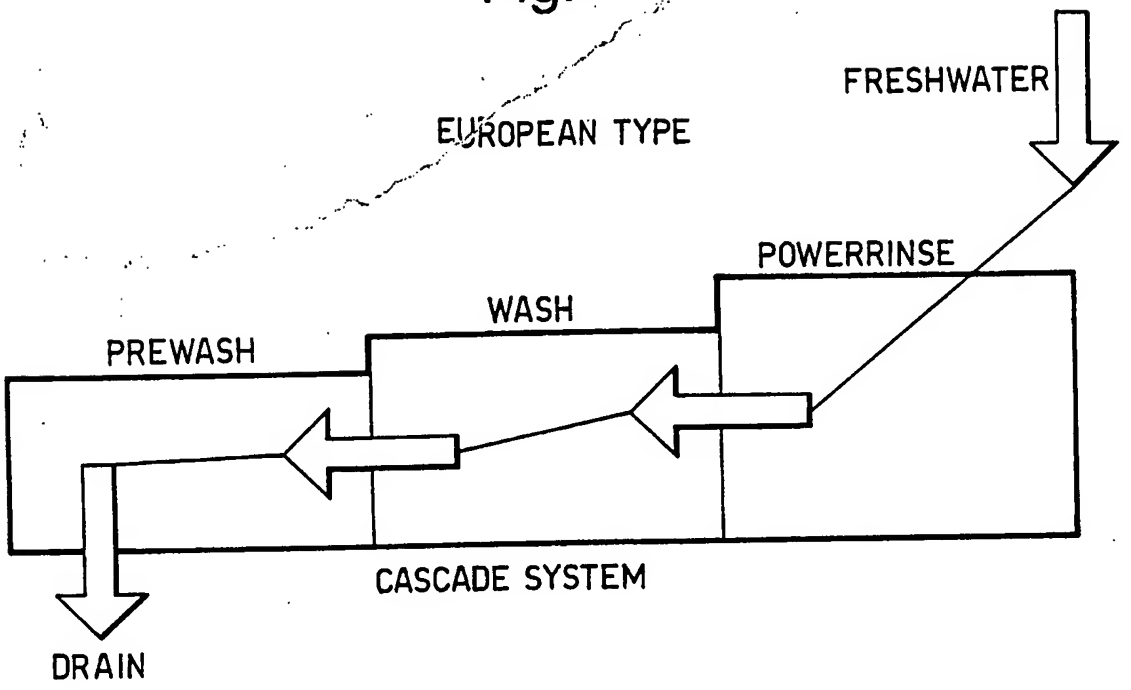
13. Use according to claim 12, wherein the composition comprises one or more complexing/sequestering agents selected from EDTA, NTA, phosphonic acids, citric acid, phosphoric acid and polymers thereof, sodium and potassium salts thereof, and acrylic/methacrylic polymers.

14. Use according to claim 12 or claim 13, wherein the amount of alkali is less than 2% by weight.

15. Use according to any one of claims 12 to 14, wherein the composition is in the form of a solid, powder, slurry or liquid.

16. Use according to claim 15, wherein the composition comprises a powder comprising: 80 to 90% by weight NTA and/or EDTA and/or a tripolyphosphate, and/or the potassium or sodium salt thereof; 4 to 9% by weight phosphonic acid and/or its sodium or potassium salt; and 4 to 9% by weight acrylic or methacrylic polymer.

Fig.2.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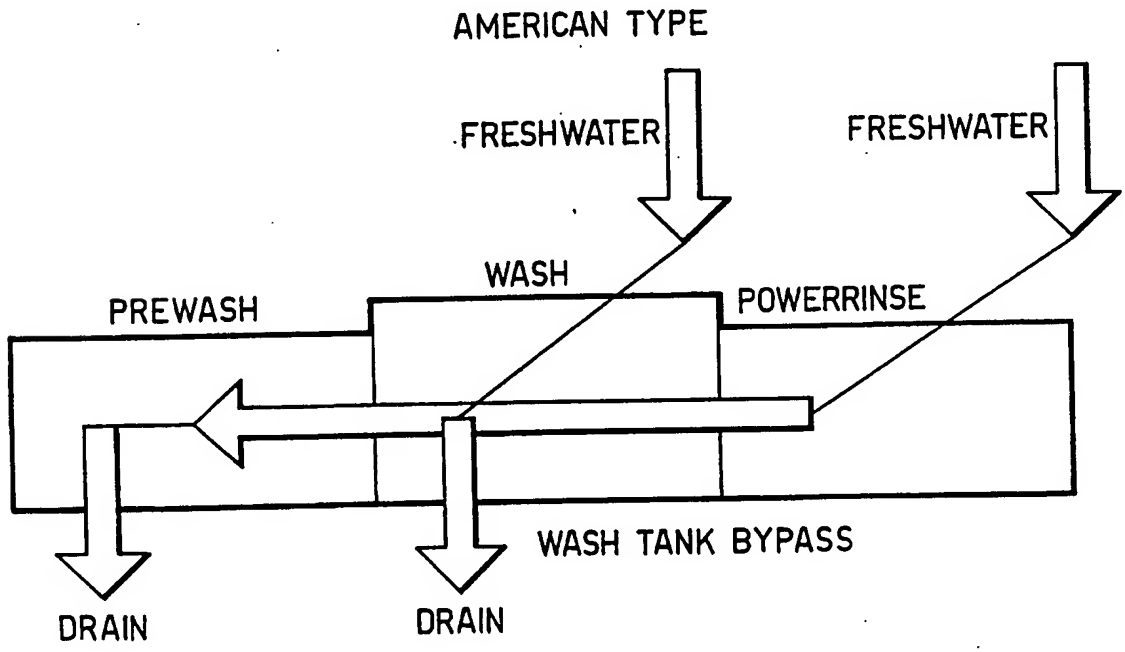
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FRESHWATER
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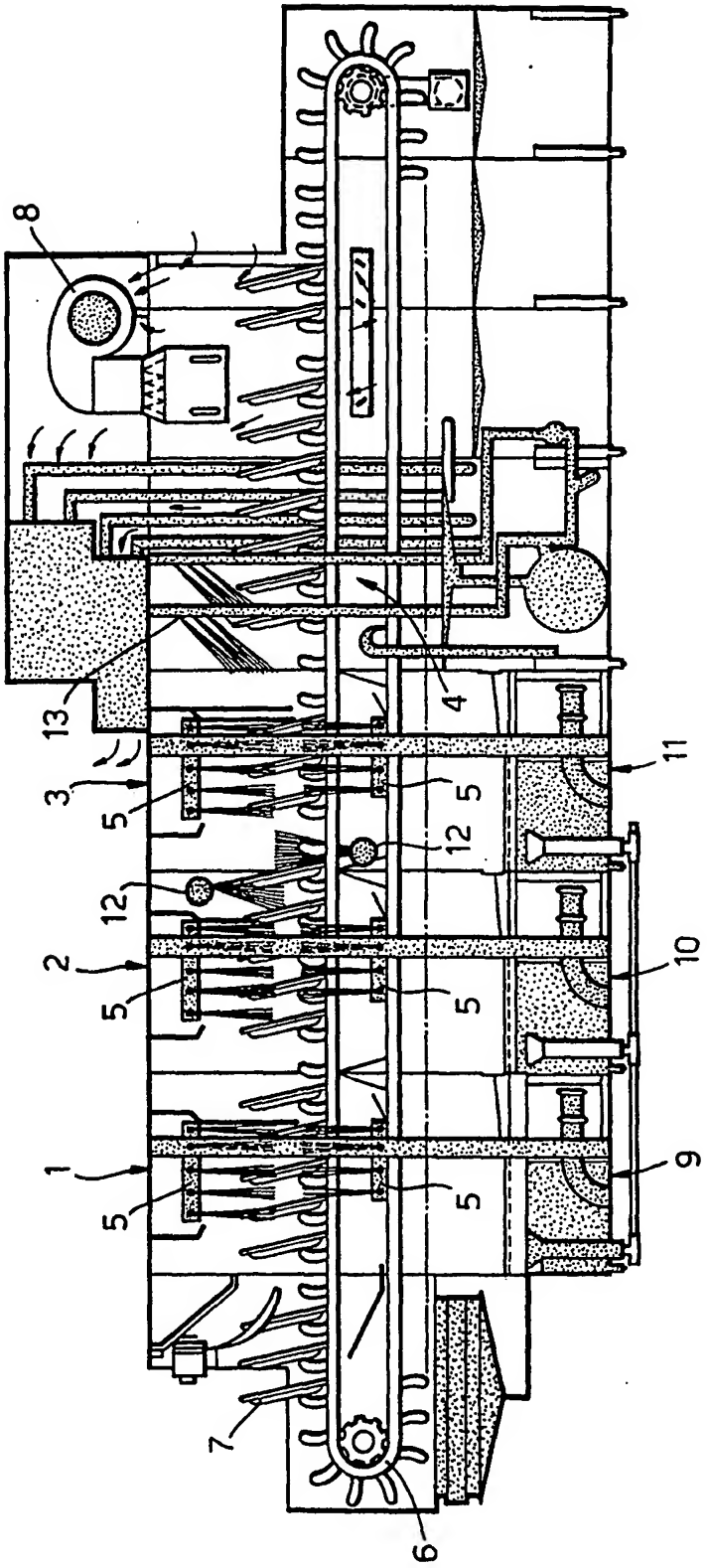
DRAIN
DRAIN

Fig.1.



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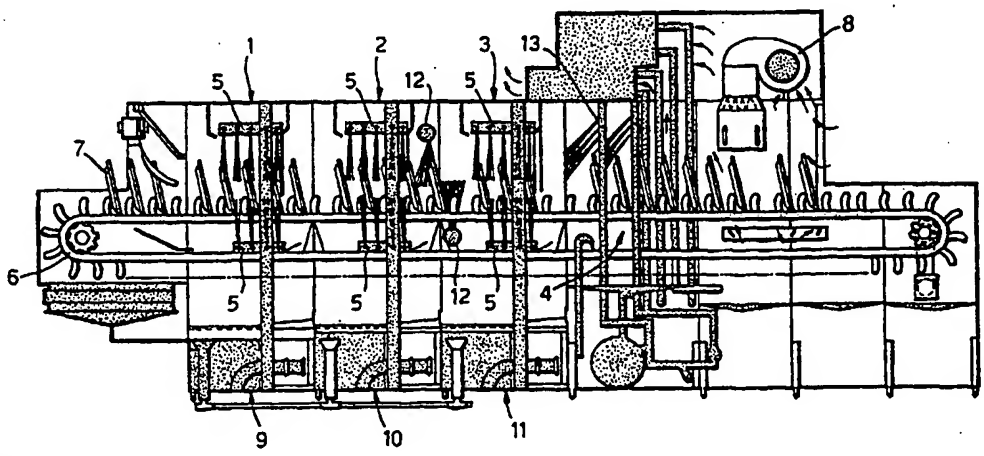

(57) Abstract

A machine dishwashing process for cleaning soiled crockery is provided. The process comprises: (1) optionally prewashing the crockery in a prewash zone; (2) washing the crockery in a wash zone with washing liquor; (3) spraying the crockery from the wash zone with a spraying solution; and (4) rinsing the crockery in a clear washing zone. The washing liquor includes used spraying solution from step (3). The spraying solution has an alkali content of at least 0.8 % by weight. An additive which is substantially free of alkali is supplied to the washing liquor to give a concentration in the washing liquor in the presence of the used spraying solution of at least 0.004 % by weight of complexing agent(s) and/or sequestering agent(s).

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A47L15/00 A47L15/24 A47L15/44 C11D7/36 C11D7/32
C11D7/16 C11D7/26 C11D3/33 C11D3/37 C11D3/06
C11D3/36

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 A47L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US,A,3 896 827 (N. ROBINSON) 29 July 1975 see column 2 - column 8; figures	1
A	GB,A,1 027 309 (R. NOLTE) 27 April 1966 see page 2 - page 3; figure 1	1
A	WO,A,91 07904 (HENKEL) 13 June 1991 see page 7 - page 16; figures	1
A	US,A,4 313 451 (E. VILEN) 2 February 1982 see column 3 - column 5; figure 1	1
A	WO,A,93 05696 (HENKEL) 1 April 1993 see page 4 - page 5; claims	1

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
24 May 1995	26. 05. 95

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax (+31-70) 340-3016	Pfannenstein, H

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP 94/03805

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. Claims : 1-11 dish washing process

2. Claims : 12-16 use of composition in a dish washing process

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searches without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

Internat·l Application No
PCT/EP 94/03805

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
US-A-3896827	29-07-75	NONE		
GB-A-1027309		NONE		
WO-A-9107904	13-06-91	DE-A-	3938755	29-05-91
		DE-D-	59004641	24-03-94
		EP-A-	0501996	09-09-92
		ES-T-	2049050	01-04-94
		JP-T-	5501973	15-04-93
		US-A-	5356483	18-10-94
US-A-4313451	02-02-82	NONE		
WO-A-9305696	01-04-93	DE-A-	4132306	08-04-93
		EP-A-	0605507	13-07-94

TI ***METERING*** ***DISPENSER*** FOR AUTOMATIC WASHERS

FILE 'STNGUIDE' ENTERED AT 16:47:21 ON 27 FEB 2002
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY, JAPAN SCIENCE
AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE
CHARGED TO COST=0592087

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Feb 22, 2002 (20020222/UP).

=> d bib abs 4,8,12,14,19,21,23-29,31,33-42,44-46,48,50,51,53,54,56-61
YOU HAVE REQUESTED DATA FROM FILE 'IFIPAT' - CONTINUE? (Y)/N:y

L20 ANSWER 4 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 3240081 IFIPAT;IFIUDB;IFICDB
TI ***CLEANING*** ***DEVICE*** AND METHOD
INF Amabile; Robert, Lake Hiawatha, NJ
Cooper; Douglas W., Ramsey, NJ
Paley; Steven J., Paramus, NJ
Paley; William R., East-Wayne, NJ
Russo; Peter B., Califon, NJ
Sayre; Jeffrey C., Oakland, NJ
Siegerman; Howard D., Hillsdale, NJ
IN Amabile Robert; Cooper Douglas W; Paley Steven J; Paley William R; Russo Peter B; Sayre Jeffrey C; Siegerman Howard D
PAF The Texwipe Company LLC, Upper Saddle River, NJ
PA Texwipe Co LLC
EXNAM Fidei, David T
AG Neff, Gregor N.
Whitman Breed Abbott and Morgan LLC
PI US 5988371 19991123 (CITED IN 001 LATER PATENTS)
AI US 1998-33345 19980302
XPD 10 Mar 2015
RLI US 1995-527153 19950912 CONTINUATION ABANDONED
US 1995-402113 19950310 CONTINUATION-IN-PART ABANDONED
US 1997-803781 19970224 DIVISION 5814159
FI US 5988371 19991123
US 5814159
DT UTILITY
FS MECHANICAL
CLMN 17
GI 6 Drawing Sheet(s), 12 Figure(s).
AB A cleaning kit for use in cleaning ***surfaces*** in clean rooms, semiconductor fabrication plants, pharmaceutical manufacturing facilities, etc. A stack of extremely clean wipers is packaged together with a container of cleaning fluid in a liquid-tight outer container. The outer container is vacuum-sealed. The kit is stored until just before it is to be used. Fluid is released from the inner container into the wipers, preferably by the use of a puncturing device operable to puncture one of the walls of the inner container by the application of pressure in a limited area on the outside of the outer container. The cleaning liquid is allowed to soak into the wipers, and the wipers are removed from the

outer container for use.
CLMN 17
GI 6 Drawing Sheet(s), 12 Figure(s).

L20 ANSWER 8 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 3125777 IFIPAT;IFIUDB;IFICDB
TI ***WASHING*** ***MACHINE*** WITH A ***DETERGENT*** ***DISPENSER***
INF Blauert; Peter, Berlin, DE
Proppe; Wolfgang, Berlin, DE
Schermuck; Horst, Berlin, DE
Stolze; Andreas, Berlin, DE
IN Blauert Peter (DE); Proppe Wolfgang (DE); Schermuck Horst (DE); Stolze Andreas (DE)
PAF BSH Bosch und Siemens Hausgeraete GmbH, Munich, DE
PA Bosch-Siemens Hausgerate GmbH DE (2561)
EXNAM Stinson, Frankie L
AG Greenberg, Laurence A.
Lerner, Herbert L.
PI US 5884506 19990323
AI US 1995-581393 19951229
XPD 29 Dec 2015
PRAI DE 1994-4447160 19941229
FI US 5884506 19990323
DT UTILITY
FS MECHANICAL
MRN 009668 MFN: 0701
CLMN 5
GI 2 Drawing Sheet(s), 4 Figure(s).
AB A ***washing*** ***machine*** includes a ***detergent*** ***dispenser*** having at least one fresh-water connection, a free air course disposed downstream of the at least one fresh-water connection, and a ***detergent*** chamber. A water guide conduit supplies fresh water to the ***detergent*** chamber. A fresh-water diversion line is connected to the water guide conduit downstream of the free air course.
CLMN 5
GI 2 Drawing Sheet(s), 4 Figure(s).

L20 ANSWER 12 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2813583 IFIPAT;IFIUDB;IFICDB
TI APPARATUS FOR MONITORING AND CONTROLLING THE OPERATION OF A ***MACHINE*** FOR ***WASHING*** ARTICLES
INF Erickson, Timothy K, Lena, IL
O'Brien, Gary R, Freeport, IL
Reeve, Ian F, Rockford, IL
IN Erickson Timothy K; O'Brien Gary R; Reeve Ian F
PAF Honeywell Inc, Minneapolis, MN
PA Honeywell Inc (39776)
EXNAM Coe, Philip R
AG Lanyi, William D
PI US 5603233 19970218 (CITED IN 003 LATER PATENTS)
AI US 1995-501354 19950712
XPD 12 Jul 2015
FI US 5603233 19970218
DT UTILITY
FS MECHANICAL
MRN 007574 MFN: 0410

CLMN 20
GI 14 Drawing Sheet(s), 16 Figure(s).
AB A ***machine*** for ***washing*** articles is provided with a wash process sensor that is capable of ***measuring*** a plurality of physical parameters that relate to the progress of a washing procedure. The wash process sensor also monitors the changes in the ***measured*** parameters and calculates a value that represents the degree of cleanliness or dirtiness of the articles being washed. In one embodiment, the wash process sensor also directly controls a plurality of devices, such as motors, heaters, ***dispensers*** and valves, to directly control the washing process.
CLMN 20
GI 14 Drawing Sheet(s), 16 Figure(s).

L20 ANSWER 14 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2754043 IFIPAT;IFIUDB;IFICDB
TI FRONT LOADING ***WASHING*** ***MACHINE***
INF Bongini, Dino, Fabriano, IT
Duri, Sandro, Fluminata, IT
Stopponi, Andrea, Matelica, IT
IN Bongini Dino (IT); Duri Sandro (IT); Stopponi Andrea (IT)
PAF Merloni Elettrodomestici SpA, Fabriano, IT
PA Merloni Elettrodomestici S p A IT
EXNAM Coe, Philip R
AG Dubno, Herbert
Kateshov, Yuri
PI US 5548978 19960827 (CITED IN 002 LATER PATENTS)
AI US 1994-346155 19941129
XPD 29 Nov 2014
PRAI IT 1993-TO909 19931130
FI US 5548978 19960827
DT UTILITY
FS MECHANICAL
MRN 007324 MFN: 0931
CLMN 17
GI 3 Drawing Sheet(s), 3 Figure(s).
AB A front loading ***laundry*** ***washing*** ***machine*** , of the domestic type, whereby the body of the washing agents distributor is mounted on the frontal wall of the washing chamber, in correspondence with the respective aperture, and facing towards the inside of the basket through the aperture of the latter.
CLMN 17
GI 3 Drawing Sheet(s), 3 Figure(s).

L20 ANSWER 19 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2537621 IFIPAT;IFIUDB;IFICDB
TI EQUIPMENT FOR THE ***MACHINE*** ***WASHING*** OF ***CLOTHES*** AND THE METHOD OF UTILIZING THE SAME; AUTOMATIC ***MEASURING*** , ***DISPENSING*** LIQUID ***DETERGENT***
INF Bailey, John, Newcastle Upon Tyne, GB
Bocquet, Gerard, Neuilly Sur Seine, FR
Bouraoui-Karoui, Aude, Strombeek-Bever, BE
Cornette, Henri, Pointoise, FR
Laurenty, Gilbert, Paris, FR
Rutter, Philippa J, Durhan, GB
IN Bailey John (GB); Bocquet Gerard (FR); Bouraoui-Karoui Aude (BE); Cornette Henri (FR); Laurenty Gilbert (FR); Rutter Philippa J (GB)

PAF The Procter & Gamble Company, Cincinnati, OH
PA Procter & Gamble Co The (68128)
EXNAM Coe, Philip R
AG Andes, William Scott
Garner, Dean L
Linman, E Kelly
PI US 5355541 19941018 (CITED IN 004 LATER PATENTS)
WO 9209737 19920611
AI US 1993-64109 19930525
WO 1991-US8824 19911125
19930525 PCT 371 date
19930525 PCT 102(e) date
XPD 25 Nov 2011
PRAI FR 1990-15064 19901130
FI US 5355541 19941018
DT UTILITY
FS CHEMICAL MECHANICAL
CHEMICAL
MECHANICAL
MRN 007156 MFN: 0013
CLMN 18
GI 7 Drawing Sheet(s), 15 Figure(s).
AB The equipment comprises a ***measuring*** and ***dispensing*** device of the reusable type for the ***machine*** ***washing*** of ***clothes*** , which comprises a hollow body (1) intended to receive the amount of liquid ***detergent*** prescribed for the wash, said body being provided with at least one filling opening (3) and outlets (7b) for the distribution of said product or products, as well as means (8) enabling the user to effect, once said device has been filled, the easy and controlled application of at least one product contained in it to selected areas of the clothing before the latter is subjected to ***washing*** in the ***machine*** , for the purpose of effecting the pretreatment of said areas before the washing cycle, said ***measuring*** and ***dispensing*** device, containing the amount of product remaining after the pretreatment, being introduced into the machine together with the clothes, said pretreatment means (8) being removable from the body of said device.
CLMN 18
GI 7 Drawing Sheet(s), 15 Figure(s).

L20 ANSWER 21 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2522109 IFIPAT;IFIUDB;IFICDB
TI ***DISPENSER*** -DISBRIBUTOR FOR LIQUID ***DETERGENT*** FOR ***WASHING*** ***MACHINES***
INF Berveglieri, Fabrizio, Genoa, IT
IN Berveglieri Fabrizio (IT)
PAF Mira Lanza SpA, Milan, IT
PA Mira Lanza S p A IT
EXNAM Stinson, Frankie L
AG Larson and Taylor
PI US 5341660 19940830 (CITED IN 002 LATER PATENTS)
AI US 1993-37443 19930326
XPD 26 Mar 2013
PRAI IT 1992-UGE36 19920626
FI US 5341660 19940830
DT UTILITY; EXPIRED
FS MECHANICAL

MRN 006626 MFN: 0446
CLMN 4
GI 2 Drawing Sheet(s), 4 Figure(s).
AB ***Dispenser*** -distributor provided with a device for the local application of the liquid ***detergent*** . The device consists of an aperture let into the top part of the side ***surface*** of the ***dispenser*** -distributor whose orifice is intercepted by a circularsectioned element rotatably supported about pins engaged in two recesses positioned on the rim of the aperture.
CLMN 4
GI 2 Drawing Sheet(s), 4 Figure(s).

L20 ANSWER 23 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2475784 IFIPAT;IFIUDB;IFICDB
TI AUTOMATIC DOSING ***DISPENSER*** EMPLOYING ATMOSPHERIC VENT TO IMPROVE OPENING RELIABILITY
INF Milenkevich, Joseph A, Cincinnati, OH
IN Milenkevich Joseph A
PAF The Procter & Gamble Company, Cincinnati, OH
PA Procter & Gamble Co The (68128)
EXNAM Shaver, Kevin P
AG Garner, Dean L
Linman, E Kelly
PI US 5314098 19940524
AI US 1993-82686 19930624
XPD 24 Jun 2013
FI US 5314098 19940524
DT UTILITY; CERTIFICATE OF CORRECTION
CDAT 29 Nov 1994
FS MECHANICAL
MRN 006627 MFN: 0629
CLMN 9
GI 3 Drawing Sheet(s), 4 Figure(s).
AB An improved ***dispenser*** for reliably adding fluid rinse additive to the rinse water in an automatic ***washing*** ***machine*** . The ***dispenser*** includes a filling/ ***dispensing*** aperture within the uppermost portion of a container for adding the fluid additive to the ***dispenser*** and for allowing the rinse water to enter and exit the ***dispenser*** . The ***dispenser*** is provided with a manually closable centrifugally openable valve for closing the filling/ ***dispensing*** aperture in the container after it has been filled with additive. The valve maintains substantially all of the fluid additive within the ***dispenser*** throughout the wash cycle until the ***dispenser*** is opened by the centrifugal force during the spin empty portion of the wash cycle. The ***dispenser*** further includes a vent which is operatably associated with the valve to vent the interior of the container to the atmosphere whenever the valve is in its closed position. The vent is positioned within the container so that it cannot be submerged in a fluid additive regardless of the orientation of the container so long as the valve remains in its closed position.
CLMN 9
GI 3 Drawing Sheet(s), 4 Figure(s).

L20 ANSWER 24 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2448561 IFIPAT;IFIUDB;IFICDB
TI ***LAUNDRY*** ***DETERGENT*** ***DISPENSING*** ***DEVICE***
INF Cornette, Henri, Pontoise, FR

Duquet, Jacky P, Herbeville, FR
IN Cornette Henri (FR); Duquet Jacky P (FR)
PAF The Proctor & Gamble Company, Cincinnati, OH
PA Procter & Gamble Co The (68128)
EXNAM McInroy, Ruth
AG Hughett, Eileen L
Johnson, Kevin C
Kock, Ronald W
PI US 344820 19940301
AI US 1991-763401 19910916
PTERM 14
XPD 1 Mar 2008
PRAI FR 1991-1734 19910320
FI US 344820 19940301
DT DESIGN
FS DESIGN
MRN 006083 MFN: 0937
CLMN 1
GI 3 Drawing Sheet(s), 7 Figure(s).
FIG. 1 is a perspective view of a ***laundry*** ***detergent*** ***dispensing*** ***device*** showing our new design;
FIG. 2 is a left side elevational view thereof;
FIG. 3 is a bottom plan view thereof;
FIG. 4 is a top plan view thereof;
FIG. 5 is a right side elevational view thereof;
FIG. 6 is a rear elevational view thereof; and,
FIG. 7 is a front elevational view thereof.
AB The ornamental design for a ***laundry*** ***detergent*** ***dispensing*** ***device*** , as shown and described.
CLMN 1
GI 3 Drawing Sheet(s), 7 Figure(s).
FIG. 1 is a perspective view of a ***laundry*** ***detergent*** ***dispensing*** ***device*** showing our new design;
FIG. 2 is a left side elevational view thereof;
FIG. 3 is a bottom plan view thereof;
FIG. 4 is a top plan view thereof;
FIG. 5 is a right side elevational view thereof;
FIG. 6 is a rear elevational view thereof; and,
FIG. 7 is a front elevational view thereof.

L20 ANSWER 25 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2423740 IFIPAT;IFIUDB;IFICDB
TI APPARATUS FOR ***DISPENSING*** RINSE WATER ADDITIVE IN AN AUTOMATIC ***WASHING*** ***MACHINE***
INF Baginski, Richard M, West Chester, OH
Cappel, Jerome P, Cincinnati, OH
McKibben, Gary E, Middletown, OH
IN Baginski Richard M; Cappel Jerome P; McKibben Gary E
PAF The Procter & Gamble Company, Cincinnati, OH
PA Procter & Gamble Co The (68128)
EXNAM Shaver, Kevin P
AG Garner, Dean L
Linman, E Kelly
PI US 5267671 19931207 (CITED IN 001 LATER PATENTS)
AI US 1992-851581 19920316
XPD 16 Mar 2012
FI US 5267671 19931207

DT UTILITY; CERTIFICATE OF CORRECTION
CDAT 4 Apr 1995
FS MECHANICAL
MRN 006083 MFN: 0316
CLMN 13
GI 2 Drawing Sheet(s), 3 Figure(s).
AB An improved apparatus for accurately ***measuring*** and ***dispensing*** a rinse water additive in an automatic ***washing*** ***machine*** . In a particularly preferred embodiment, an apparatus is provided for accurately ***measuring*** a relatively small volume of fluid product by forming an annular column within the ***dispenser*** . The annular column extends at least to approximately the desired fill level for the additive so that the relatively small amount of fluid product causes a substantial change in the fluid's vertical position within the ***dispenser*** . This is preferably accomplished by providing a ***dispenser*** having an internal pushup configuration in its base, the pushup configuration extending at least to approximately the desired fill level within the ***dispenser*** . An improved sealing structure is also provided for the valve used to close the filling and ***dispensing*** aperture in the ***dispenser*** body during the wash cycle. A flexible securement member is used to secure a recessed valve to the ***dispenser*** to minimize the chances of premature opening during the wash cycle. Each of these improvements helps to insure that the correct amount of additive will be added to the ***dispenser*** and that substantially all of additive initially added to the ***dispenser*** will be present when the valve is opened by the centrifugal force of the spin cycle so that all of the material can be effectively utilized during the rinse cycle.
CLMN 13
GI 2 Drawing Sheet(s), 3 Figure(s).

L20 ANSWER 26 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2407850 IFIPAT;IFIUDB;IFICDB
TI ARRANGEMENT FOR CONTROLLING ***DETERGENT*** ADDITION IN ***WASHING*** ***MACHINES***
INF Frucco, Giuseppe, Pordenone, IT
Russo, Fernando, Pordenone, IT
IN Frucco Giuseppe (IT); Russo Fernando (IT)
PAF Zanussi Elettrodomestici SpA, IT
PA Zanussi Elettrodomestici SpA IT (19710)
EXNAM Coe, Philip R
AG Pearne, Gordon, McCoy & Granger
PI US 5253494 19931019 (CITED IN 001 LATER PATENTS)
AI US 1992-832427 19920207
XPD 7 Feb 2012
PRAI IT 1991-A12 19910227
FI US 5253494 19931019
DT UTILITY; REASSIGNED
FS MECHANICAL
MRN 006010 MFN: 0149
CLMN 3
GI 2 Drawing Sheet(s), 5 Figure(s).
AB A controller is associated with the ***detergent*** ***dispenser*** of a ***washing*** ***machine*** , such as a ***clothes*** ***washing*** ***machine*** or a combined ***clothes*** ***washing*** and drying ***machine*** . The controller selectively controls the addition of various ***detergents*** and rinsing aids

into the machine's tub. The corresponding control position is signalled by a plurality of micro-switches (17, 18, 19, 20) that are actuated by a rotating compartment selector (15) of the ***dispenser*** . The selector selectively establishes communication between the cold or hot water supply and each one of the compartments of said ***dispenser*** . The micro-switches (17, 18, 19, 20) can be switched on or off, along with a corresponding operational component part (42, 43, 44, 45) of the machine, by the rotating compartment selector means (15). The closure of the micro-switches is reported to the electronic microprocessor controller (40) which therefore will identify the control position of the rotating compartment selector (15) and, as a consequence, the corresponding phase of the washing cycle being performed.

CLMN 3
GI 2 Drawing Sheet(s), 5 Figure(s).

L20 ANSWER 27 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2377300 IFIPAT;IFIUDB;IFICDB
TI ARRANGEMENT FOR ***DISPENSING*** LIQUID ***DETERGENTS*** AND/OR RINSE AIDS IN A ***WASHING*** ***MACHINE***
INF Cargnel, Giuseppe, Treviso, IT
Rizzetto, Pietro, Venezia, IT
IN Cargnel Giuseppe (IT); Rizzetto Pietro (IT)
PAF Zanussi Elettrodomestici SpA, Pordenone, IT
PA Zanussi Elettrodomestici SpA IT (19710)
EXNAM Coe, Philip R
AG Pearne, Gordon, McCoy & Granger
PI US 5226301 19930713 (CITED IN 001 LATER PATENTS)
AI US 1992-825044 19920124
XPD 24 Jan 2012
PRAI IT 1991-UPN2 19910218
FI US 5226301 19930713
DT UTILITY; REASSIGNED; CERTIFICATE OF CORRECTION
CDAT 12 Apr 1994
FS MECHANICAL
MRN 005991 MFN: 0178
CLMN 8
GI 5 Drawing Sheet(s), 5 Figure(s).
AB A ***dispenser*** for ***washing*** ***machines*** , in particular ***clothes*** ***washing*** ***machines*** or combined ***clothes*** ***washing*** and drying ***machines*** . The ***dispenser*** includes first and second rigid conduits (12, 13) extending orthogonally with respect to each other. The first is connected with a sealed enclosure (8) containing the liquid ***detergents*** and/or rinse aids. The second is connected with a quick-fitting coupler (25) that is adapted to be connected and disconnected with respect to a further rigid conduit (28) communicating with the wash tub of the ***washing*** ***machine*** through a positive-displacement pump. The second rigid conduit (13) is associated with a check valve (32) that is biased by a spring (42) to move from a first to a second position, whereby a communication is therefore established or discontinued between the enclosure (8) and its outer space when the second rigid conduit (13) is engaged and disengaged, respectively, with respect to said quick-fitting coupling means (25). The ***dispensing*** arrangement can quickly and easily be installed in and removed from ***washing*** ***machines*** of the aforementioned type.
CLMN 8

GI 5 Drawing Sheet(s), 5 Figure(s).

L20 ANSWER 28 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2355950 IFIPAT;IFIUDB;IFICDB
TI AUTOMATIC ***DISPENSING*** APPARATUS
INF Reinhard, Roger A, Greensboro, NC
IN Reinhard Roger A
PAF Kay Chemical Company, Greensboro, NC
PA Kay Chemical Co (18396)
EXNAM Coe, Philip R
AG Finnegan, Henderson, Farabow, Garrett & Dunner
PI US 5207080 19930504 (CITED IN 006 LATER PATENTS)
AI US 1992-836831 19920219
XPD 19 Feb 2012
FI US 5207080 19930504
DT UTILITY
FS MECHANICAL
MRN 006079 MFN: 0875
CLMN 30
GI 4 Drawing Sheet(s), 4 Figure(s).
AB A ***dispensing*** apparatus for automatically ***dispensing*** ***detergent*** into a ***laundry*** ***machine*** . The electrical current drawn by the ***laundry*** ***machine*** is monitored by a detecting device to detect when the electrical current exceeds a predetermined threshold current. When the electrical current exceeds the threshold current, the detecting device transmits a signal indicating that ***detergent*** should be conveyed from the ***detergent*** supply to the washtub of the ***laundry*** ***machine*** by a conveying device. The signal is delayed for a predetermined period of time by a delay timer. After the delay, the conveying device is controlled to convey the ***detergent*** . If the washing process is interrupted for less than a predetermined period of time, a dwell timer prevents multiple conveyance of ***detergent*** into the washtub.
CLMN 30
GI 4 Drawing Sheet(s), 4 Figure(s).

L20 ANSWER 29 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2354112 IFIPAT;IFIUDB;IFICDB
TI ***DEVICE*** FOR ***WASHING*** ***MACHINES*** TO CONTROL THE INTRODUCTION OF ***DETERGENT***
INF Bravin, Daniele, Azzano X, IT
IN Bravin Daniele (IT)
PAF Zanussi Elettrodomestici SpA, Pordenone, IT
PA Zanussi Elettrodomestici SpA IT (19710)
EXNAM Huson, Gregory L
AG Pearne, Gordon, McCoy & Granger
PI US 5205445 19930427
AI US 1991-806050 19911212
XPD 12 Dec 2011
PRAI IT 1990-A45777 19901214
FI US 5205445 19930427
DT UTILITY; REASSIGNED; CERTIFICATE OF CORRECTION
CDAT 11 Jan 1994
FS MECHANICAL
MRN 005950 MFN: 0866
CLMN 1

GI 2 Drawing Sheet(s), 3 Figure(s).
AB A ***device*** for ***washing*** ***machines*** to control the introduction of ***detergent*** . It is intended especially for ***washing*** ***machines*** and combined ***machines*** for the ***washing*** and drying of ***laundry*** , which have a microprocessor and a distributor with several separate compartments for the ***detergents*** and additives to be introduced into the machine tub during the ***laundry*** -washing cycle, and which are equipped as well with a selector 13 that may be set to the several compartments by means of two jointed levers 15 and 16. One such lever 15 is associated with two PTC sensors 20 and 21 containing wax which is heated when such sensors are powered. According to the invention, the device includes the connection of the PTC sensors 20 and 21 to a triac 32 powered by the machine electric circuit through a diode 34 and 35 for the purpose, so as to allow one, the other, or both PTC sensors 20 and 21 to be turned ON for every positive or negative half-wave of the electric current. This, in turn, causes the displacement of the selector 13 by means of the levers 15 and 16 to the corresponding regulatory position. A device made in this way proves to be simple and operationally reliable.
CLMN 1
GI 2 Drawing Sheet(s), 3 Figure(s).

L20 ANSWER 31 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2321978 IFIPAT;IFIUDB;IFICDB
TI COMBINED CLOSURE AND ***MEASURING*** DEVICE
INF Britt, William J, Zionsville, IN
Silvenis, Scott A, Midland, MI
IN Britt William J; Silvenis Scott A
PAF The Dow Chemical Company, Midland, MI
PA Dow Chemical Co The (24712)
EXNAM Skaggs, H Grant
PI US 5176292 19930105
AI US 1990-566881 19900813
DCD 3 May 2005
XPD 5 Jan 2010
RLI US 1988-166886 19880311 CONTINUATION ABANDONED
US 1989-378446 19890707 CONTINUATION ABANDONED
US 1986-842617 19860321 DIVISION 4741459
FI US 5176292 19930105
US 4741459
DT UTILITY; EXPIRED
FS MECHANICAL
MRN 006011 MFN: 0068
CLMN 1
GI 3 Drawing Sheet(s), 8 Figure(s).
AB A closure and ***dispensing*** ***device*** for ***laundry*** products which permits precise ***dispensing*** of small amounts as well as the ***dispensing*** of large amounts for large washloads.
CLMN 1
GI 3 Drawing Sheet(s), 8 Figure(s).

L20 ANSWER 33 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2309870 IFIPAT;IFIUDB;IFICDB
TI ***WASHING*** - ***MACHINE***
INF Geiger, Peter, Balingen, DE
IN Geiger Peter (DE)
PAF BSG-Schalttechnik GmbH & Co, KG, Balingen, DE

PA BSG Schalttechnik GmbH and Co KG DE
EXNAM Stinson, Frankie L
AG Darby & Darby
PI US 5165260 19921124 (CITED IN 005 LATER PATENTS)
WO 9013698 19901115
AI US 1991-635179 19910103
WO 1990-EP681 19900427
19910103 PCT 371 date
19910103 PCT 102(e) date
XPD 27 Apr 2010
PRAI DE 1989-3914644 19890503
FI US 5165260 19921124
DT UTILITY; EXPIRED
FS MECHANICAL
MRN 005677 MFN: 0711
CLMN 17
GI 5 Drawing Sheet(s), 8 Figure(s).
AB PCT No. PCT/EP90/00681 Sec. 371 Date Jan. 3, 1991 Sec. 102(e) Date Jan. 3, 1991 PCT Filed Apr. 27, 1990 PCT Pub. No. WO90/13698 PCT Pub. Date Nov. 15, 1990. In connection with a machine for the treatment of ***laundry*** , in particular a ***washing*** - ***machine*** or drier, comprising weight sensors for automatic ***measurements*** of the weight of the ***laundry*** and subsequent determination of the quantities of treatment agents to be filled in (water, ***detergents*** , or the like), for determining the relative humidity content, for detecting and removing imbalance conditions, it is proposed to arrange a decoupling frame between an outer housing resting on a stationary supporting ***surface*** , and the entire inner system of the ***washing*** - ***machine*** or dryer, including the lye tank with drum and other partial components, the decoupling frame being itself resiliently suspended in the outer housing and supporting all the other components, and to provide weight sensors, preferable resistance strain gauges, which coact with the resilient suspension of the decoupling frame.
CLMN 17
GI 5 Drawing Sheet(s), 8 Figure(s).

L20 ANSWER 34 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2266417 IFIPAT;IFIUDB;IFICDB
TI STIRRING ***DEVICE*** ; ***WASHING*** OF ***GARMENTS***
INF Coigley, Joseph H, 34 Hawkes St, Saugus, MA, 01906
IN Coigley Joseph H
PAF Unassigned
PA Unassigned Or Assigned To Individual (68000)
EXNAM Hornsby, Harvey C
EXNAM Alexander, Reginald L
AG Gilden, Leon
PI US 5125751 19920630
AI US 1991-714917 19910613
XPD 13 Jun 2011
FI US 5125751 19920630
DT UTILITY; EXPIRED
FS MECHANICAL
CLMN 2
GI 4 Drawing Sheet(s), 8 Figure(s).
AB An organization is provided with an elongate handle formed with a mounting cap at a forward end thereof, with a ''Y'' shaped support

bracket mounted to the mounting cap mounted to a serpentine stirring member thereon, wherein the serpentine member is oriented orthogonally relative to an axis defined by the cylindrical mounting cap. The organization is utilized for the stirring of elastomeric garments and the like in a washing procedure. A modification of the invention includes an elongate flexible handle permitting agitation of the stirring member, with a selectively insertable stiffening rod to provide selective stiffening of the handle when desired. Further, the organization may include agitating tubes securable to the stirring member for enhanced agitation and ***dispensing*** of a ***soap*** ***mixture*** therefrom.

CLMN 2
GI 4 Drawing Sheet(s), 8 Figure(s).

L20 ANSWER 35 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2229515 IFIPAT;IFIUDB;IFICDB
TI ADDITIVE FLUID ***DISPENSER*** NOZZLE
INF Quinn, William R, Swampscott, MA
IN Quinn William R
PAF Raytheon Company, Lexington, MA
PA Raytheon Co (69864)
EXNAM Coe, Philip R
AG Clark, William R
Sharkansky, Richard M
PI US 5092141 19920303 (CITED IN 009 LATER PATENTS)
AI US 1991-725939 19910627
XPD 28 Dec 2009
RLI US 1989-458219 19891228 CONTINUATION ABANDONED
US 1990-609058 19901105 CONTINUATION ABANDONED
FI US 5092141 19920303
DT UTILITY; REASSIGNED
FS MECHANICAL
CLMN 16
GI 2 Drawing Sheet(s), 6 Figure(s).
AB A ***clothes*** ***washing*** ***machine*** including a cabinet having an upper wall portion provided with a clothes receiving opening, an annular cowling within the cabinet and having an inner peripheral portion encircling the clothes receiving opening, the cowling having an annular midportion sloped radially downward to an outer peripheral portion of the cowling which is secured to a rim of a drain tub defining an open end thereof, the drain tub having rotatably supported therein a spin tub with an opening disposed within the open end portion of the drain tub and aligned with the clothes receiving opening, and a liquid ***soap*** ***dispensing*** system disposed within the cabinet and externally of the drain tub, the ***soap*** ***dispensing*** system comprising a multi-load reservoir of liquid ***soap*** connected hydraulically through a pump to a nozzle having a drain tube with a spout end portion adjacent the inner peripheral portion of the cowling and encircling a delivery tube which is disposed longitudinally and eccentrically within the drain tube, the delivery tube having an input end portion connected hydraulically to the pump and having an opposing spout end portion recessed axially within the spout end portion of the drain tube, the spout end portion of the delivery tube being conically shaped and having extended through a sloped wall portion thereof an outlet orifice which is aligned with a target aperture in the cowling overlooking the opening in the spin tub.
CLMN 16

GI 2 Drawing Sheet(s), 6 Figure(s).

L20 ANSWER 36 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2198132 IFIPAT;IFIUDB;IFICDB
TI ***DETERGENT*** ***DISPENSER*** FOR ***CLOTHES*** ***WASHING*** ***MACHINES*** OR THE LIKE
INF Ikeda, Yoshio, Aichi, JP
Okazaki, Kiyoshi, Seto, JP
IN Ikeda Yoshio (JP); Okazaki Kiyoshi (JP)
PAF Kabushiki Kaisha Toshiba, Kanagawa, JP
PA Toshiba Corp JP (10641)
EXNAM Shaver, Kevin P
AG Shaw, Jr, Philip M
PI US 5063757 19911112 (CITED IN 001 LATER PATENTS)
AI US 1990-516782 19900430
XPD 30 Apr 2010
PRAI JP 1989-120120 19890513
JP 1989-120977 19890515
JP 1989-120978 19890515
JP 1989-123656 19890516
FI US 5063757 19911112
DT UTILITY
FS MECHANICAL
MRN 005298 MFN: 0430
CLMN 6
GI 6 Drawing Sheet(s), 13 Figure(s).
AB A ***detergent*** ***dispenser*** for ***clothes*** ***washing*** ***machines*** includes a ***detergent*** container for containing a predetermined amount of powdered ***detergent*** , the ***detergent*** container having a lower discharge outlet from which the ***detergent*** contained therein is discharged and a ***detergent*** fall preventing member displaced between a first position where the ***detergent*** is prevented from falling out from the discharge outlet of the container and a second position where the ***detergent*** discharged from the discharge outlet of the ***detergent*** container is allowed to fall out therefrom.
CLMN 6
GI 6 Drawing Sheet(s), 13 Figure(s).

L20 ANSWER 37 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 2114365 IFIPAT;IFIUDB;IFICDB
TI HIGH PERFORMANCE WASHING PROCESS FOR VERTICAL AXIS AUTOMATIC WASHER; ROTATION, ***MIXING*** WITH WASH LIQUID IN INCREMENTS
INF Cur, Nihat O, St Joseph Township, Berrien County, MI
Euler, John W, St Joseph, MI
Hardaway, Anthony H, Lincoln Township, Berrien County, MI
Pastryk, Jim J, Weesaw Township, Berrien County, MI
IN Cur Nihat O; Euler John W; Hardaway Anthony H; Pastryk Jim J
PAF Whirlpool Corporation, Benton Harbor, MI
PA Whirlpool Corp (92000)
EXNAM Coe, Philip R
AG Hill, Van Santen, Steadman & Simpson
PI US 4987627 19910129 (CITED IN 011 LATER PATENTS)
AI US 1990-461404 19900105
XPD 5 Jan 2010
FI US 4987627 19910129

DT UTILITY
FS CHEMICAL MECHANICAL
CHEMICAL
MECHANICAL
MRN 005230 MFN: 0538
CLMN 29
GI 7 Drawing Sheet(s), 12 Figure(s).
AB A method for ***laundering*** a textile wash load is provided for use in a vertical axis ***washing*** ***machine*** in which a concentrated ***detergent*** solution is continuously applied to a spinning wash load for a predetermined time period to thoroughly wet the clothes load. The initial charge of ***detergent*** is thoroughly ***mixed*** with the ***detergent*** in a recirculation step before being applied to the ***clothes*** load. The concentration ***wash*** liquid is incrementally applied to the spinning clothes load until a sufficient amount of wash liquid is detected as having been introduced to the wash zone. That amount of wash liquid is then recirculated and reapplied to the clothes load for a predetermined length of time. After the time period, additional water is added to the solution to dilute it to a normal concentration and then mechanical agitation and rinsing steps are conducted to complete the wash cycle.
CLMN 29
GI 7 Drawing Sheet(s), 12 Figure(s).

L20 ANSWER 38 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 1982583 IFIPAT;IFIUDB;IFICDB
TI APPARATUS FOR CONTROLLING A ***SOAP*** CONCENTRATION IN CLEANING SOLVENT
INF Hayashi, Takahiro, Otsu, JP
Nakata, Takeshi, Otsu, JP
IN HAYASHI TAKAHIRO (JP); NAKATA TAKESHI (JP)
PAF Sanyo Electric Co, Ltd, JP
PA SANYO ELECTRIC CO LTD JP (74128)
EXNAM Nilson, Robert G
AG Darby & Darby
PI US 4867193 19890919 (CITED IN 006 LATER PATENTS)
AI US 1989-302438 19890126
XPD 26 Jan 2009
PRAI JP 1988-23367 19880202
FI US 4867193 19890919
DT UTILITY; REASSIGNED
FS MECHANICAL
MRN 005022 MFN: 0391
005034 0937
CLMN 8
GI 12 Drawing Sheet(s), 18 Figure(s).
AB A ***soap*** concentration control apparatus comprising: a pump for supplying a cleaning solvent to a washing tub; a liquid quantity sensor for ***measuring*** a quantity of the solvent supplied to the washing tub by the pump; a ***soap*** supplying pump for supplying a ***soap*** to the washing tub; a sampling container for sampling the solvent; a ***soap*** concentration ***measuring*** sensor for ***measuring*** a ***soap*** concentration in the sampled solvent; a setting device for setting a desired ***soap*** concentration; an arithmetic device for calculating an operating time of the ***soap*** supplying pump required for making a ***soap*** concentration of the solvent in the washing tub approach to the set desired ***soap***

concentration on the basis of the ***measured*** quantity of solvent, the ***measured*** ***soap*** concentration and the ***soap*** supplying capacity per unit time of the ***soap*** supplying pump; and a controller for operating the ***soap*** supplying pump on the basis of the calculation result of the arithmetic device, which is useful to maintain a desired ***soap*** concentration in the dry ***cleaning*** ***machine*** thereby providing a constant finish of the ***laundry*** .

CLMN 8
GI 12 Drawing Sheet(s), 18 Figure(s).

L20 ANSWER 39 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 1977808 IFIPAT;IFIUDB;IFICDB
TI ***DETERGENT*** ***DISPENSING*** SYSTEM FOR ***CLOTHES*** ***WASHING*** ***MACHINE*** OR THE LIKE
INF Ikeda, Yoshio, Aichi, JP
Torita, Fumio, Aichi, JP
IN IKEDA YOSHIO (JP); TORITA FUMIO (JP)
PAF Kabushiki Kaisha Toshiba, Kawasaki, JP
PA TOSHIBA CORP JP (10641)
EXNAM Coe, Philip R
EXNAM Gerrity, Stephen F
AG Foley & Lardner, Schwartz, Jeffery, Schwaab, Mack, Blumenthal & Evans
PI US 4862711 19890905
AI US 1988-251988 19880929
XPD 6 Feb 2007
RLI US 1987-12207 19870206 CONTINUATION
PRAI JP 1986-31405 19860215
JP 1986-129714 19860604
FI US 4862711 19890905
DT UTILITY
FS MECHANICAL
CLMN 6
GI 8 Drawing Sheet(s), 9 Figure(s).
AB A ***detergent*** ***dispensing*** system for ***clothes*** ***washing*** ***machines*** consists of a ***detergent*** containing hopper having a ***detergent*** discharging passageway having the section of approximately semicircular configuration and formed at the bottom portion, a spiral coil arranged in the ***detergent*** discharging passageway and discharging the powdered ***detergent*** contained in the hopper by screw action caused by its rotation so that the powdered ***detergent*** is ***dispensed*** to a ***wash*** tub of a ***clothes*** ***washing*** ***machine*** , an electric motor for driving the coil, a first manually operated switch for inputting data of a kind of the powdered ***detergent*** to be ***dispensed*** , a second manually operated switch for inputting data of degree of soil of ***clothes*** to be ***washed*** , a third manually operated switch for inputting data of a water level to set the water level in the wash tub, and a controller for controlling the rotation speed of the coil so that the amount of the powdered ***detergent*** to be ***dispensed*** takes a value in accordance with the kind of the powdered ***detergent*** , the degree of soil of the ***clothes*** to be ***washed*** and the water level the data of which are supplied from the first, second and third manually operated switches respectively.
CLMN 6
GI 8 Drawing Sheet(s), 9 Figure(s).

L20 ANSWER 40 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 1973240 IFIPAT;IFIUDB;IFICDB
TI CHEMICAL SOLUTION ***DISPENSER*** APPARATUS AND METHOD OF USING
INF Lehn, Chris F, Minneapolis, MN
IN LEHN CHRIS F
PAF [redacted], St Paul, MN
PA ECOLAB INC (25992)
EXNAM Stinson, Frankie L
AG Merchant, Gould, Smith, Edell, Welter & Schmidt
PI US 4858449 19890822 (CITED IN 016 LATER PATENTS)
AI US 1986-817350 19860109
XPD 22 Aug 2006
FI US 4858449 19890822
DT UTILITY
FS MECHANICAL
MRN 004537 MFN: 0831
004706 0547
CLMN 25
GI 5 Drawing Sheet(s), 7 Figure(s).
AB An automatic ***dispenser*** for ***dispensing*** solid chemicals used in cleaning processes which includes (i) means for initiating ***dispensing*** of a concentrated chemical solution, (ii) means for forming a concentrated chemical solution, (iii) means for directing the concentrated chemical solution to its utilization point, (iv) means for ***measuring*** the conductivity and temperature of the concentrated chemical solution ***dispensed*** , (v) means for calculating the amount of chemical ***dispensed*** based upon the conductivity and temperature of the concentrated chemical solution ***dispensed*** , and (vi) means for terminating formation of the concentrated chemical solution when a predetermined amount of chemical has been ***dispensed*** .
CLMN 25
GI 5 Drawing Sheet(s), 7 Figure(s).

L20 ANSWER 41 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 1959870 IFIPAT;IFIUDB;IFICDB
TI METHOD AND APPARATUS FOR ***DISPENSING*** SOLUTIONS; ***LAUNDRY*** WASHING SYSTEM
INF Brady, Daniel F, Eagan, MN
Copeland, James L, Burnsville, MN
IN BRADY DANIEL F; COPELAND JAMES L
PAF [redacted], St Paul, MN
PA ECOLAB INC (25992)
EXNAM Stinson, Frankie L
AG Merchant, Gould, Smith, Edell, Welter & Schmidt
PI US 4845965 19890711 (CITED IN 018 LATER PATENTS)
AI US 1986-945908 19861223
XPD 23 Dec 2006
FI US 4845965 19890711
DT UTILITY
FS MECHANICAL
MRN 004652 MFN: 0172
004706 0547
CLMN 21
GI 3 Drawing Sheet(s), 3 Figure(s).
AB A ***dispenser*** suitable for ***dispensing*** multiple

solutions to, preferably, multiple utilization points. A ***laundry*** washing system (18) according to the invention includes a ***dispenser*** (20) which ***dispenses*** a plurality of cleaning solution to a plurality of ***washing*** ***machines*** (72) through a single common conduit (25). Conduit (25) is flushed after ***dispensing*** one solution but before ***dispensing*** a second chemically incompatible solution. A preferred ***dispenser*** (20) is capable of servicing multiple ***laundry*** ***machines*** (72) using a first-in first-out approach wherein the machines request service from a control system (74) which temporarily disables any ''late-comers'' until the appropriate solution can be ***dispensed*** to the machine (72) making the first, or highest priority, request.

CLMN 21
GI 3 Drawing Sheet(s), 3 Figure(s).

L20 ANSWER 42 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 1943302 IFIPAT;IFIUDB;IFICDB
TI AUTOMATIC SYSTEM FOR DISSOLVING DRY ***DETERGENT***
INF Gulmatico, Jr, Ramon, 4200 Stanbridge Ave, Long Beach, CA, 90808
IN GULMATICO RAMON JR
PAF Unassigned
PA UNASSIGNED OR ASSIGNED TO INDIVIDUAL (68000)
EXNAM Jenkins, Robert W
AG Thomas, Charles H
PI [redacted] 19890516 (CITED IN 004 LATER PATENTS)
AI US 1988-207547 19880616
XPD 16 Jun 2008
FI US 4830509 19890516
DT UTILITY; EXPIRED
FS MECHANICAL
CLMN 20
GI 4 Drawing Sheet(s), 5 Figure(s).
AB A device is provided for dissolving dry ***detergent*** to provide a liquid ***detergent*** solution to ***washing*** ***machines*** in a ***laundry*** . A tank is divided into upper and lower compartments. The upper compartment drains into the lower compartment when a tank valve therebetween is opened, and the compartments are maintained in mutual isolation when the tank valve is closed. High and low liquid level sensors in the upper compartment control ***mixing*** and ***dispensation*** of ***detergent*** solution. A quantity of dry, solid powdered ***detergent*** is ***mixed*** with a predetermined quantity of water in the upper compartment while the upper and lower compartments are isolated from each other during a ***mixing*** cycle. During the ***mixing*** cycle the lower compartment serves as a reservoir for supplying liquid ***detergent*** solution to one or more ***washing*** ***machines*** . Following the ***mixing*** cycle, the contents of the upper compartment are allowed to drain into the lower compartment.

CLMN 20
GI 4 Drawing Sheet(s), 5 Figure(s).

L20 ANSWER 44 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 1595473 IFIPAT;IFIUDB;IFICDB
TI AUTOMATIC ***DISPENSER*** FOR A ***DETERGENT***
INF Eknor, Per O E, Huskvarna, SE
IN EKNOR PER O (SE)
PAF Aktiebolaget Electrolux, Stockholm, SE

PA ELECTROLUX AB SE (27096)
EXNAM Rolla, Joseph J
EXNAM Huppert, Michael S
AG Miller, Alfred E
PI US 4516696 19850514 (CITED IN 001 LATER PATENTS)
WO 8200753 19820318
AI US 1984-578988 19840213
WO 1981-SE225 19810810
19820416 PCT 371 date
19820416 PCT 102(e) date
XPD 14 May 2002
RLI US 1982-375031 19820416 CONTINUATION ABANDONED
PRAI SE 1980-6035 19800828
FI US 4516696 19850514
DT UTILITY; EXPIRED
FS MECHANICAL
CLMN 4
GI 1 Drawing Sheet(s), 2 Figure(s).
AB PCT No. PCT/SE81/00225 Sec. 371 Date Apr. 16, 1982 Sec. 102(e) Date Apr. 16, 1982 PCT Filed Aug. 10, 1981 PCT Pub. No. WO82/00753 PCT Pub. Date Mar. 18, 1982. Automatic ***dispenser*** for a ***detergent*** in the form of a paste in a dish or ***laundry*** ***washing*** ***machine*** . The inventive device generally comprises a cartridge-container of common type and a feeding device comprising a motor driven piston rod and a piston. The assembly is positioned in a suitable location in the machine, for example in its door. To facilitate exchange of the cartridge, the piston rod is easily removable by means of a support wheel which can be swung out and which is kept in working position by a resilient latch. The quantity of the portion is controlled by a current pulse from the program control device of the machine.
CLMN 4
GI 1 Drawing Sheet(s), 2 Figure(s).

L20 ANSWER 45 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 1563463 IFIPAT;IFIUDB;IFICDB
TI ***METERING*** METHOD FOR SUPPLYING ***DETERGENT*** CONCENTRATE; MINIMIZES CAKING
INF Haslberger, Richard, Hallabruck, DE
Saalmann, Gunter, Gevelsberg, DE
IN HASLBERGER RICHARD (DE); SAALMANN GUNTER (DE)
PAF Lang Apparatebau GmbH, Siegsdorf, DE
PA LANG APPARATEBAU GMBH DE (11753)
EXNAM Coe, Philip R
AG Hammond & Littell, Weissenberger & Dippert
PI US 4486910 19841211 (CITED IN 002 LATER PATENTS)
AI US 1982-371132 19820423
XPD 23 Apr 2002
PRAI DE 1981-3118973 19810513
FI US 4486910 19841211
DT UTILITY; EXPIRED; CERTIFICATE OF CORRECTION
CDAT 3 Sep 1985
FS CHEMICAL MECHANICAL
CHEMICAL
MECHANICAL
CLMN 2
GI 1 Drawing Sheet(s), 1 Figure(s).
AB A method and apparatus for supplying dry ***detergent*** concentrate

to a ***metering*** device for dissolving or dispersing in water which prevents or minimizes the formation of dust, lumping, caking, and encrustation of vessel walls and supplies new ***detergent*** to the ***laundry*** plant in response to changes in electrical conductivity of the wash water from a predetermined value which indicates consumption of original ***detergent*** required in soil removal and need for replenishment thereof. The minimizing of dust and protection of the ***detergent*** from moisture is accomplished by using a flexible delivery container, the filling means and emptying means of which are sealable and which emptying means acts in cooperation with the ***metering*** apparatus section to form an integral delivery system which is generally isolated from the surrounding atmosphere.

CLMN 2
GI 1 Drawing Sheet(s), 1 Figure(s).

L20 ANSWER 46 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 1538293 IFIPAT;IFIUDB;IFICDB
TI APPARATUS FOR SUPPLYING ***DETERGENT*** CONCENTRATE
INF Haslberger, Richard, Hallabruck, DE
Saalmann, Gunter, Gevelsberg, DE
IN HASLBERGER RICHARD (DE); SAALMANN GUNTER (DE)
PAF Lang Apparatebau GmbH, DE
PA LANG APPARATEBAU GMBH DE (11753)
EXNAM Coe, Philip R
AG Hammond & Littell, Weissenberger & Dippert
PI US 4463582 19840807 (CITED IN 011 LATER PATENTS)
AI US 1983-498693 19830527
XPD 23 Apr 2002
RLI US 1982-371132 19820423 DIVISION
PRAI DE 1981-3118973 19810531
FI US 4463582 19840807
DT UTILITY; EXPIRED
FS MECHANICAL
MRN 004246 MFN: 0653
CLMN 2
GI 1 Drawing Sheet(s), 1 Figure(s).
AB A method and apparatus for supplying dry ***detergent*** concentrate to a ***metering*** device for dissolving or dispersing in water which prevents or minimizes the formation of dust, lumping, caking, and encrustation of vessel walls and supplies new ***detergent*** to the ***laundry*** plant in response to changes in electrical conductivity of the wash water from a predetermined value which indicates consumption of original ***detergent*** required in soil removal and need for replenishment thereof. The minimizing of dust and protection of the ***detergent*** from moisture is accomplished by using a flexible delivery container, the filling means and emptying means of which are sealable and which emptying means acts in cooperation with the ***metering*** apparatus section to form an integral delivery system which is generally isolated from the surrounding atmosphere.
CLMN 2
GI 1 Drawing Sheet(s), 1 Figure(s).

L20 ANSWER 48 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 1364306 IFIPAT;IFIUDB;IFICDB
TI AUTOMATIC LIQUID LEVEL CONTROL; ***WASHING*** ***MACHINE*** WHICH MONITORS AND ADJUSTS WATER LEVEL AFTER LOADING; PROGRAMMABLE
INF Ross, Frank E, Newton, IA

IN ROSS FRANK E
PAF The Maytag Company, Newton, IA
PA MAYTAG CO THE (53280)
EXNAM Coe, Philip R
AG Ward, Richard L
PI US 4303406 19811201 (CITED IN 027 LATER PATENTS)
AI US 1980-130470 19800314
XPD 14 Mar 2000
FI US 4303406 19811201
DT UTILITY; REASSIGNED
FS CHEMICAL
CLMN 11
GI 3 Drawing Sheet(s), 6 Figure(s).
AB An automatic liquid level control system is provided for a ***laundry*** appliance having a tub and a perforate fabric basket within the tub. Washing liquid is ***injected*** onto the ***surface*** of fabrics to be ***laundered*** . A portion of the washing liquid will be absorbed by the fabrics and a portion will flow through the fabrics and fabric basket perforations for accumulation in the tub. Sensing devices are provided for monitoring the changing liquid level in the tub and the time required to reach predetermined levels. A programmable controller determines the quantity of additional liquid required to ***launder*** the fabric load responsive to the sensing devices and commensurate with the load characteristics and controls the ***injection*** thereof onto the fabrics.
CLMN 11
GI 3 Drawing Sheet(s), 6 Figure(s).

L20 ANSWER 50 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 1032954 IFIPAT;IFIUDB;IFICDB
TI FINE TIMING APPARATUS FOR ELECTRONIC ***DETERGENT*** ***DISPENSING*** SYSTEM
INF Kleimola, David L, St Paul, MN
Nystuen, David L, Bloomington, MN
Nystuen, Marcus I, St Paul, MN
IN KLEIMOLA DAVID L; NYSTUEN DAVID L; NYSTUEN MARCUS I
PAF Economics Laboratory, Inc, St Paul, MN
PA [redacted] (25992)
EXNAM Tollberg, Stanley H
EXNAM Shannon, John P
AG Merchant, Gould, Smith, Edell, Welter & Schmidt
PI US 3982666 19760928 (CITED IN 009 LATER PATENTS)
AI US 1975-561373 19750324
XPD 28 Sep 1993
RLI US 1971-210669 19711222 DIVISION ABANDONED
US 1973-335136 19730223 DIVISION 3881328
FI US 3982666 19760928
US 3881328
DT UTILITY
FS MECHANICAL
CLMN 4
GI 1 Drawing Sheet(s), 3 Figure(s).
AB A ***detergent*** ***dispensing*** system for sequentially and automatically ***injecting*** various liquid products (e.g., ***detergents*** , fabric conditioners, neutralizers, etc.) into a ***laundry*** ***washing*** ***machine*** . Each liquid product is independently connected to a venturiaspirator positioned within

separate carrier fluid conduits (e.g. water conduits) and the product is drawn into the respective carrier fluid conduits upon passage of carrier fluid therethrough. Electrical control circuitry, including electrical timing apparatus, triggered by a signaling device synchronized with the ***machine*** ***washing*** cycle selectively actuates and deactuates a solenoid-operated valve positioned upstream of each venturi-aspirator so as to allow ***injection*** into the carrier fluid of a predetermined quantity of each liquid product at the desired point in the machine cycle.

CLMN 4
GI 1 Drawing Sheet(s), 3 Figure(s).

L20 ANSWER 51 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 0977425 IFIPAT;IFIUDB;IFICDB
TI ***LAUNDRY*** ***WASHING*** AND DRYING ***MACHINE***
INF de Hedouville, Philippe, Feuquieres-en-Vimeu, FR
IN DE HEDOUVILLE PHILIPPE
PAF US Philips Corporation, New York, NY
PA U S PHILIPS CORP (60616)
EXNAM Hornsby, Harvey C
EXNAM Coe, Philip R
AG Treacy, David R
Trifari, Frank R
PI US 3927542 19751223
AI US 1974-441972 19740213
XPD 23 Dec 1992
PRAI FR 1973-5802 19730219
FI US 3927542 19751223
DT UTILITY; REASSIGNED
FS MECHANICAL
CLMN 1
GI 4 Drawing Sheet(s), 4 Figure(s).
AB A ***laundry*** ***washing*** and drying ***machine*** of small size and low weight, obtained by combining a tub with cut-off corners and a corresponding drum, suspended to damping springs and held in position by friction devices which are situated between the tub and the base. The funnel with the ***detergent*** ***dispenser*** is independent of the housing.
CLMN 1
GI 4 Drawing Sheet(s), 4 Figure(s).

L20 ANSWER 53 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 0930870 IFIPAT;IFIUDB;IFICDB
TI ELECTRONIC ***DETERGENT*** ***DISPENSING*** SYSTEM
INF Kleimola, David L, St Paul, MN
Nystuen, David L, Bloomington, MN
Nystuen, Marcus I, St Paul, MN
IN KLEIMOLA DAVID L; NYSTUEN DAVID L; NYSTUEN MARCUS I
PAF Economics Laboratory, Inc, St Paul, MN
PA ECOLAB INC (25992)
EXNAM Wilhite, Billy J
EXNAM Coe, Philip R
AG Merchant, Gould, Smith & Edell
PI US 3881328 19750506 (CITED IN 021 LATER PATENTS)
AI US 1973-335136 19730223
XPD 6 May 1992
RLI US 1971-210669 19711222 DIVISION ABANDONED

FI US 3881328 19750506
DT UTILITY
FS MECHANICAL
CLMN 2
GI 1 Drawing Sheet(s), 3 Figure(s).
AB A ***detergent*** ***dispensing*** system for sequentially and automatically ***injecting*** various liquid products (e.g., ***detergents*** , fabric conditioners, neutralizers, etc.) into a ***laundry*** ***washing*** ***machine*** . Each liquid product is independently connected to a venturiaspirator positioned within separate carrier fluid conduits (e.g. water conduits) and product is drawn into the respective carrier fluid conduits upon passage of carrier fluid therethrough. Electrical control means, including electrical timing apparatus, triggered by a signalling device synchronized with the ***machine*** ***washing*** cycle selectively actuates and deactuates a solenoidoperated valve positioned upstream of each venturi-aspirator so as to allow ***injection*** into the carrier fluid of a predetermined quantity of each liquid product at the desired point in the machine cycle.
CLMN 2
GI 1 Drawing Sheet(s), 3 Figure(s).

L20 ANSWER 54 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 0897768 IFIPAT;IFIUDB;IFICDB
TI PRECLEANING A ***LAUNDRY*** ***WASHING*** ***MACHINE***
INF Rottering, Quintin N, Newton, IA
IN ROTTERING Q
PAF The Maytag Company, Newton, IA
PA MAYTAG CO THE (53280)
EXNAM Hornsby, Harvey C
EXNAM Coe, Philip R
AG Landwier, William G
Ward, Richard L
PI US 3848436 19741119 (CITED IN 001 LATER PATENTS)
AI US 1973-335251 19730223
XPD 19 Nov 1991
FI US 3848436 19741119
DT UTILITY
FS MECHANICAL
CLMN 7
GI 2 Drawing Sheet(s), 5 Figure(s).
AB An optional preliminary operation in a ***laundry*** ***washing*** ***machine*** effects a precleaning or flushing of the fluid system including the fluid container, the pump, and the drain conduits to effectively remove residual vitiated fluid from the ***washing*** ***machine*** and thereby avoid intermixing of the residual fluid with the washing fluid for the succeeding washing operation.
CLMN 7
GI 2 Drawing Sheet(s), 5 Figure(s).

L20 ANSWER 56 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 0735095 IFIPAT;IFIUDB;IFICDB
TI ***LAUNDERING*** SYSTEM
INF Rosenfeld, Howard, New York, NY
Wetzler, Justin J, Evanston, IL
IN ROSENFELD HOWARD; WETZLER JUSTIN J
PAF The Linen Supply Association of America, Miami Beach, FL

PA LINEN SUPPLY ASSOCIATION OF AM
EXNAM Scheel, Walter A
EXNAM Coe, Philip R
AG Williams, J N
PI US 3686899 19720829 (CITED IN 011 LATER PATENTS)
AI US 1970-55468 19700716
XPD 29 Aug 1989
FI US 3686899 19720829
DT UTILITY
FS MECHANICAL
CLMN 24
GI 6 Drawing Sheet(s), 12 Figure(s).
AB A ***laundering*** and finishing system for garments (such as no-iron garments) collected from a number of user sources of soiled garments includes a hanging zone, a washing zone including ***spray*** assemblies, a drying zone, and a conveyor network extending from the hanging station through the washing and drying zones, the conveyor network being adapted to support individual garments on hangers to hang loosely for washing and wrinkle-free drying in the zones, the hanging zone being arranged to enable a worker to hang soiled garments from one user source at a time in serial order upon an initial conveyor of the conveyor network, and the conveyor network being further adapted to discharge the garments in the same serial order so that garments originating from different sources of soiled garments are not ***mixed*** .
CLMN 24
GI 6 Drawing Sheet(s), 12 Figure(s).

L20 ANSWER 57 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 0612773 IFIPAT;IFIUDB;IFICDB
TI CLEANSING AGENT ***DISPENSER***
INF Grandclement, Gerard, Cap, FR
IN GRANDCLEMENT GERARD
PAF Eaton Yale & Towne Inc, Cleveland, OH
PA EATON CORP (25848)
EXNAM Coleman, Samuel F
AG Teagno & Toddy
PI US 3565291 19710223 (CITED IN 002 LATER PATENTS)
AI US 1968-771139 19681028
XPD 23 Feb 1988
PRAI FR 1967-126013 19671026
FI US 3565291 19710223
DT UTILITY
FS MECHANICAL
CLMN 5
GI 2 Drawing Sheet(s), 5 Figure(s).
AB A ***dispenser*** for ***detergents*** or the like to be used in dish or ***clothes*** ***washing*** ***machines*** . The ***dispenser*** includes a housing having preferably a pair of cavities therein for retaining ***detergent*** , with a cover overlying one of the cavities. ***Detergent*** from the exposed cavity is utilized in the first wash cycle and ***detergent*** from the covered cavity is released for the second wash cycle. The cover is held in this initial position by a tensioned torsion spring. A solenoid device coupled to a member around which the cover pivots serves to release the torsion spring in response to a signal from the washer timer-programmer. Rotation of the cover to expose the initially covered cavity is effected by the spring

energy.
CLMN 5
GI 2 Drawing Sheet(s), 5 Figure(s).

L20 ANSWER 58 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 0416910 IFIPAT;IFIUDB;IFICDB
TI EGG ***CLEANING*** ***MACHINE***
IN HALVERSON JAMES E
PA UNASSIGNED OR ASSIGNED TO INDIVIDUAL (68000)
PI US 3360817 19680102 (CITED IN 007 LATER PATENTS)
XPD 2 Jan 1985
FI US 3360817 19680102
DT UTILITY
FS MECHANICAL

L20 ANSWER 59 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 0206590 IFIPAT;IFIUDB;IFICDB
TI AUTOMATIC SYSTEM FOR SUPPLYING ALKALI AND ***DETERGENT*** TO
COMMERCIAL ***LAUNDRY*** ***WASHING*** ***MACHINES***
IN HAMBRO HERBERT A
PA VERITAS CO INC
PI US 3160317 19641208 (CITED IN 024 LATER PATENTS)
XPD 8 Dec 1981
FI US 3160317 19641208
DT UTILITY
FS MECHANICAL

L20 ANSWER 60 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 0178013 IFIPAT;IFIUDB;IFICDB
TI GRANULES ***DISPENSER***
IN HALL WILLIAM BURKE; TORONGO ALBERT H JR
PA PROCTER & GAMBLE CO THE (68128)
PI US 3127067 19640331 (CITED IN 010 LATER PATENTS)
XPD 31 Mar 1981
FI US 3127067 19640331
DT UTILITY
FS MECHANICAL

L20 ANSWER 61 OF 61 IFIPAT COPYRIGHT 2002 IFI
AN 0149400 IFIPAT;IFIUDB;IFICDB
TI ***METERING*** ***DISPENSER*** FOR AUTOMATIC WASHERS
IN DEWEES THOMAS G; LUCAS MALCOLM B
PA PROCTER & GAMBLE CO THE (68128)
PI US 3101871 19630827 (CITED IN 004 LATER PATENTS)
XPD 27 Aug 1980
FI US 3101871 19630827
DT UTILITY
FS MECHANICAL

=> d his full
PREVIOUS MSG TOO LONG
d his full

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* * * * * * * * * *  Welcome to STN International  * * * * * * * * * *

NEWS  1          Web Page URLs for STN Seminar Schedule - N. America
NEWS  2  Sep 17  IMSworld Pharmaceutical Company Directory name change
                 to PHARMASEARCH
NEWS  3  Oct 09  Korean abstracts now included in Derwent World Patents
                 Index
NEWS  4  Oct 09  Number of Derwent World Patents Index updates increased
NEWS  5  Oct 15  Calculated properties now in the REGISTRY/ZREGISTRY File
NEWS  6  Oct 22  Over 1 million reactions added to CASREACT
NEWS  7  Oct 22  DGENE GETSIM has been improved
NEWS  8  Oct 29  AAASD no longer available
NEWS  9  Nov 19  New Search Capabilities  USPATFULL and USPAT2
NEWS 10  Nov 19  TOXCENTER(SM) - new toxicology file now available on STN
NEWS 11  Nov 29  COPPERLIT now available on STN
NEWS 12  Nov 29  DWPI revisions to NTIS and US Provisional Numbers
NEWS 13  Nov 30  Files VETU and VETB to have open access
NEWS 14  Dec 10  WPINDEX/WPIDS/WPIX New and Revised Manual Codes for 2002
NEWS 15  Dec 10  DGENE BLAST Homology Search
NEWS 16  Dec 17  WELDASEARCH now available on STN
NEWS 17  Dec 17  STANDARDS now available on STN
NEWS 18  Dec 17  New fields for DPCI
NEWS 19  Dec 19  CAS Roles modified
NEWS 20  Dec 19  1907-1946 data and page images added to CA and CAplus
NEWS 21  Jan 25  BLAST(R) searching in REGISTRY available in STN on the Web
NEWS 22  Jan 25  Searching with the P indicator for Preparations
NEWS 23  Jan 29  FSTA has been reloaded and moves to weekly updates
NEWS 24  Feb 01  DKILIT now produced by FIZ Karlsruhe and has a new update
                 frequency
NEWS 25  Feb 19  Access via Tymnet and SprintNet Eliminated Effective 3/31/02

NEWS EXPRESS  February 1 CURRENT WINDOWS VERSION IS V6.0d,
              CURRENT MACINTOSH VERSION IS V6.0a(ENG) AND V6.0Ja(JP),
              AND CURRENT DISCOVER FILE IS DATED 05 FEBRUARY 2002
NEWS HOURS    STN Operating Hours Plus Help Desk Availability
NEWS INTER    General Internet Information
NEWS LOGIN    Welcome Banner and News Items
NEWS PHONE    Direct Dial and Telecommunication Network Access to STN
NEWS WWW      CAS World Wide Web Site (general information)

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ENTER COST CENTER (NONE):0592087

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=> fil hca

FILE 'HCA' ENTERED AT 16:46:44 ON 20 FEB 2002
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FILE COVERS 1907 - 14 Feb 2002 VOL 136 ISS 8
FILE LAST UPDATED: 14 Feb 2002 (20020214/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

The P indicator for Preparations was not generated for all of the CAS Registry Numbers that were added to the CAS files between 12/27/01 and 1/23/02. As of 1/23/02, the situation has been resolved. Searches and/or SDIs in the H/Z/CA/CAplus files incorporating CAS Registry Numbers with the P indicator executed between 12/27/01 and 1/23/02 may be incomplete. See the NEWS message on this topic for more information.

```
=> s laund?

L1        15939 LAUND?

=> s (garment? or cloth?)(3a)(wash? or clean?)

           3624 GARMENT?
          37815 CLOTH?
         375792 WASH?
         184651 CLEAN?
L2         2117 (GARMENT? OR CLOTH?)(3A)(WASH? OR CLEAN?)

=> s l1 or l2

L3        17728 L1 OR L2

=> s deterg? or soap? or surfac? or (use or stock)()(solut? or soln# or liq?)

          93127 DETERG?
          54337 SOAP?
        1863006 SURFAC?
        1388257 USE
        2504557 USES
        3652942 USE
                (USE OR USES)
          34162 STOCK
          10631 STOCKS
          42325 STOCK
                (STOCK OR STOCKS)
         492855 SOLUT?
        2375945 SOLN#
        1261541 LIQ?
           8460 (USE OR STOCK)(W)(SOLUT? OR SOLN# OR LIQ?)
L4      1975302 DETERG? OR SOAP? OR SURFAC? OR (USE OR STOCK)(W)(SOLUT? OR SOLN#
                OR LIQ?)

=> s l3 and l4(3a)(meter? or measur? or dispens? or blend? or mix?)
```

```
        31059 METER?
      2232147 MEASUR?
        11489 DISPENS?
       207982 BLEND?
      2322448 MIX?
        67637 L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX?)
L5       1147 L3 AND L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX?)

=> s l5 and (inject? or pre()spot? or spray?)

      578620 INJECT?
      127069 PRE
         691 PRES
      127543 PRE
                (PRE OR PRES)
       83001 SPOT?
          17 PRE(W)SPOT?
      198840 SPRAY?
L6       180 L5 AND (INJECT? OR PRE(W)SPOT? OR SPRAY?)

=> s l6 not p/dt

     3635793 P/DT
L7         7 L6 NOT P/DT

=> d ti 1-7


L7   ANSWER 1 OF 7  HCA  COPYRIGHT 2002 ACS
TI   Dispenser for detergents made from TPU: an engineering
     material for consumer goods

L7   ANSWER 2 OF 7  HCA  COPYRIGHT 2002 ACS
TI   Studies on rinsing-out ratio of granular lanudry detergents in washing
     machines

L7   ANSWER 3 OF 7  HCA  COPYRIGHT 2002 ACS
TI   Application of sodium 2-ethylhexyl sulfate in detergent
     conditioning through cold mixing by atomization and
     spraying

L7   ANSWER 4 OF 7  HCA  COPYRIGHT 2002 ACS
TI   Use of the method for liquifying Glauber's salt in production of
     laundry powders

L7   ANSWER 5 OF 7  HCA  COPYRIGHT 2002 ACS
TI   Utilization of sodium gluconate in detergent mixtures

L7   ANSWER 6 OF 7  HCA  COPYRIGHT 2002 ACS
TI   A new British development in coal preparation

L7   ANSWER 7 OF 7  HCA  COPYRIGHT 2002 ACS
TI   American Society for Testing Materials, Standards, 1941 Supplement. III.
     Nonmetallic materials, general


=> d


L7   ANSWER 1 OF 7  HCA  COPYRIGHT 2002 ACS
AN   120:166543  HCA
TI   Dispenser for detergents made from TPU: an engineering
     material for consumer goods
AU   Haettig, Juergen
CS   Germany
SO   Plastverarbeiter (1993), 44(5), 58-60
     CODEN: PLARAN; ISSN: 0032-1338
```

DT Journal
LA German

=> d bib abs 3

L7 ANSWER 3 OF 7 HCA COPYRIGHT 2002 ACS
AN 105:174834 HCA
TI Application of sodium 2-ethylhexyl sulfate in **detergent** conditioning through cold **mixing** by atomization and **spraying**
AU Goliat, Lucia; Szekely, Georgy; Sacarescu, Bogdan; Maurer, Ewald; Stoica, Rodica
CS ICECHIM, Bucharest, Rom.
SO Rev. Chim. (Bucharest) (1986), 37(6), 479-82
CODEN: RCBUAU
DT Journal
LA Romanian
AB The properties of Na 2-ethylhexyl sulfate [126-92-1] (an anionic surfactant) and the results obtained when used in **mixts.** with granular **detergents** based on sulfated C12-18 fatty alcs. Na salts were described.

=> d his

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FILE 'HCA' ENTERED AT 16:46:44 ON 20 FEB 2002
CHARGED TO COST=0592087
L1 15939 S LAUND?
L2 2117 S (GARMENT? OR CLOTH?)(3A)(WASH? OR CLEAN?)
L3 17728 S L1 OR L2
L4 1975302 S DETERG? OR SOAP? OR SURFAC? OR (USE OR STOCK)()(SOLUT? OR SOL
L5 1147 S L3 AND L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX?
L6 180 S L5 AND (INJECT? OR PRE()SPOT? OR SPRAY?)
L7 7 S L6 NOT P/DT

=> s l3 and l4(3a)(meter? or measur? or dispens? or blend? or mix? or inject? or pre()spot? or spray?)

31059 METER?
2232147 MEASUR?
11489 DISPENS?
207982 BLEND?
2322448 MIX?
578620 INJECT?
127069 PRE
691 PRES
127543 PRE
(PRE OR PRES)
83001 SPOT?
198840 SPRAY?
77876 L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX? OR INJECT? OR PRE(W)SPOT? OR SPRAY?)
L8 1378 L3 AND L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX? OR INJECT? OR PRE(W)SPOT? OR SPRAY?)

=> s l8 not l7

L9 1371 L8 NOT L7

=> s l9 and (l1 or wash? or clean?)(2a)(machine or equip? or devic? or dev# or appt# or apparat?)

```
        375792 WASH?
        184651 CLEAN?
         65222 MACHINE
         21787 MACHINES
         81060 MACHINE
                 (MACHINE OR MACHINES)
        159556 EQUIP?
        535491 DEVIC?
          1517 DEV#
            38 APPT#
        358310 APPARAT?
         11956 (L1 OR WASH? OR CLEAN?)(2A)(MACHINE OR EQUIP? OR DEVIC? OR DEV#
               OR APPT# OR APPARAT?)
L10        98 L9 AND (L1 OR WASH? OR CLEAN?)(2A)(MACHINE OR EQUIP? OR DEVIC?
               OR DEV# OR APPT# OR APPARAT?)

=> s l10 not p/dt

       3635793 P/DT
L11         12 L10 NOT P/DT

=> d ti 1-12


L11  ANSWER 1 OF 12  HCA  COPYRIGHT 2002 ACS
TI   Effect of various factors on uptake of an acid dye by nylon 66
     microfilament yarn

L11  ANSWER 2 OF 12  HCA  COPYRIGHT 2002 ACS
TI   The dissolving behavior of surfactants in household washing
     machines

L11  ANSWER 3 OF 12  HCA  COPYRIGHT 2002 ACS
TI   Wash fastness of fluorocarbon finishes on polyester fabrics

L11  ANSWER 4 OF 12  HCA  COPYRIGHT 2002 ACS
TI   Surfactant challenges for 2000 and beyond

L11  ANSWER 5 OF 12  HCA  COPYRIGHT 2002 ACS
TI   Comparative study of some selected fat removal boosters

L11  ANSWER 6 OF 12  HCA  COPYRIGHT 2002 ACS
TI   An intelligent washing machine for the evaluation of
     laundry detergents

L11  ANSWER 7 OF 12  HCA  COPYRIGHT 2002 ACS
TI   The surface tension of polycomponent tenside solutions

L11  ANSWER 8 OF 12  HCA  COPYRIGHT 2002 ACS
TI   Determination of enzyme action in biologically active detergents

L11  ANSWER 9 OF 12  HCA  COPYRIGHT 2002 ACS
TI   Semicontinuous hot bleaching of colored cloth in a limited space

L11  ANSWER 10 OF 12  HCA  COPYRIGHT 2002 ACS
TI   Washing time and temperature effect on cleaning and bleaching action of 3
     different washing powders in the home washing machine

L11  ANSWER 11 OF 12  HCA  COPYRIGHT 2002 ACS
TI   Evaluation of soiled test pieces

L11  ANSWER 12 OF 12  HCA  COPYRIGHT 2002 ACS
TI   A method to improve reproducibility in detergency tests


=> d bib abs 3,11,12
```

L11 ANSWER 3 OF 12 HCA COPYRIGHT 2002 ACS
AN 129:344420 HCA
TI Wash fastness of fluorocarbon finishes on polyester fabrics
AU Dufour, F.; Jordan, C.; Viallier, P.
CS Laboratoire de Physique et de Mecanique Textiles, ENSITM, Mullhouse, 68093, Fr.
SO Journal of the Society of Dyers and Colourists (1998), 114(9), 258-263
CODEN: JSDCAA; ISSN: 0037-9859
PB Society of Dyers and Colourists
DT Journal
LA English
AB A fabric's **surface** tension provides a **measure** of its ability to repel water and oil, while water penetration can be evaluated from a fabric's hydrostatic pressure, which depends mainly on the pore size and thus on the weave. One way of making a surface hydrophobic is to coat it with fluorinated polymers, which confer a low surface tension, reducing the fabric's wettability while preserving its breathability. Polyester microfiber fabrics (which already have a tight weave and hence high hydrostatic pressure) can be treated with fluorinated finishes to increase water and oil repellency. Observation of a piece of fluorinated polyester microfiber fabric over a no. of washings has shown that a regenerative heat treatment preserved the repellency of the fabric but had little influence on the decrease in hydrostatic pressure that occurs with washing.

L11 ANSWER 11 OF 12 HCA COPYRIGHT 2002 ACS
AN 46:44049 HCA
OREF 46:7347e-g
TI Evaluation of soiled test pieces
AU Mitchell, R. B.
SO Am. Soc. Testing Materials, Papers on Evaluation of Soaps and Detergents, Spec. Tech. Pub. (1951), No. 115, 3-8
DT Journal
LA Unavailable
AB This was a study to det. the possibility of establishing "national standards" for soil removal as judged by soiled test pieces when used in a com. **laundry**. Three specific soiled test pieces were used; they were evaluated in a normal family whitework classification over a 20-wash test for soil removal. A single, soiled test piece cannot adequately **measure detergency** as judged by soil removal under all operating conditions. The adoption of "national" performance standards for soiled test pieces apparently is not practical. The control-chart method of interpreting data is of value in detg. control of specific washing formulas as related to individual plants. Soiled test pieces can be used advantageously by com. **laundries** as long as their results are interpreted on the basis of the individual **laundry** only. A given soiled test piece cannot adequately measure the efficiency of the various **laundry** detergents, **washing** formulas, or **equipment** as judged by soil-removal results obtained in actual plant use.

L11 ANSWER 12 OF 12 HCA COPYRIGHT 2002 ACS
AN 39:8287 HCA
OREF 39:1306i,1307a-b
TI A method to improve reproducibility in detergency tests
AU Woodhead, J. A.; Vitale, P. T.; Frantz, A. J.
SO Oil and Soap (1944), 21, 333-7
DT Journal
LA Unavailable
AB The most important factor in the method described is the random selection, for each test, of many pieces of soiled fabric each made at different times. The tests were made in an ordinary home-type **washing machine**, with an unbuilt all-tallow Na soap of 40.degree. titer and a **sprayed laundry soap** contg. silicate, Na_2CO_3 and tetrasodium pyrophosphate as builders. In terms of standard

deviation, the reproducibility of a detn. was found to be about .+-.7 when results were expressed as units of black removed under the conditions described. It is possible to det. with reasonable assurance differences between detergents which are greater than 6%. The simplicity of app. required for the test should make it easy to use in labs., and the method might be adapted to measure relative efficiencies of various types of **washing machines** as well as for evaluating detergents.

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=> d his

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     FILE 'HCA' ENTERED AT 16:46:44 ON 20 FEB 2002
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L1         15939 S LAUND?
L2          2117 S (GARMENT? OR CLOTH?)(3A)(WASH? OR CLEAN?)
L3         17728 S L1 OR L2
L4       1975302 S DETERG? OR SOAP? OR SURFAC? OR (USE OR STOCK)()(SOLUT? OR SOL
L5          1147 S L3 AND L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX?
L6           180 S L5 AND (INJECT? OR PRE()SPOT? OR SPRAY?)
L7             7 S L6 NOT P/DT
L8          1378 S L3 AND L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX?
L9          1371 S L8 NOT L7
L10           98 S L9 AND (L1 OR WASH? OR CLEAN?)(2A)(MACHINE OR EQUIP? OR DEVIC
L11           12 S L10 NOT P/DT

=> s l10 not l11

L12           86 L10 NOT L11

=> d ti 1-10


L12  ANSWER 1 OF 86  HCA  COPYRIGHT 2002 ACS
TI   Preparation of laundry kits in packages to be dispensed by a
     device comprising a computer and compositions of the laundry
     detergent thereof

L12  ANSWER 2 OF 86  HCA  COPYRIGHT 2002 ACS
TI   Surfactant mixtures containing ethoxylated unsaturated
     fatty alcohols as nonionic surfactants

L12  ANSWER 3 OF 86  HCA  COPYRIGHT 2002 ACS
TI   Ozone system for purification in washing machine

L12  ANSWER 4 OF 86  HCA  COPYRIGHT 2002 ACS
TI   Procedure for determining the concentration of a laundry
     detergent, procedure for adding an optimal amount of detergent, and a
     washing machine incorporating these procedures

L12  ANSWER 5 OF 86  HCA  COPYRIGHT 2002 ACS
TI   Dishwashing and laundry detergent particles and methods for
     making them

L12  ANSWER 6 OF 86  HCA  COPYRIGHT 2002 ACS
TI   Method of dispensing a detergent composition

L12  ANSWER 7 OF 86  HCA  COPYRIGHT 2002 ACS
TI   Method of dispensing detergent composition

L12  ANSWER 8 OF 86  HCA  COPYRIGHT 2002 ACS
TI   Detergent tablets based on two types of granules, their production and
     their use
```

L12 ANSWER 9 OF 86 HCA COPYRIGHT 2002 ACS
TI **Laundry** pretreatment or prespotting compositions for improving aqueous **laundry** processing

L12 ANSWER 10 OF 86 HCA COPYRIGHT 2002 ACS
TI **Garment cleaning** compositions comprising salts of phosphoric acid ester anions and organic amine derivative cations and nonionic surfactants with good dirt removal properties and low foaming properties at rapid water flow

=> d ti 11-86;fil stnguide

L12 ANSWER 11 OF 86 HCA COPYRIGHT 2002 ACS
TI Perfume beads in detergent forms, especially tablets for **machine laundering**

L12 ANSWER 12 OF 86 HCA COPYRIGHT 2002 ACS
TI Reusable high-molecular weight, solid-state active detergent and preparation thereof

L12 ANSWER 13 OF 86 HCA COPYRIGHT 2002 ACS
TI Production of particulate detergent compositions with high bulk density and good flowability

L12 ANSWER 14 OF 86 HCA COPYRIGHT 2002 ACS
TI Granular detergent compositions with long-lasting antifoaming property and excellent rinsability

L12 ANSWER 15 OF 86 HCA COPYRIGHT 2002 ACS
TI Alkaline **detergent** containing **mixed** organic and inorganic sequestrants resulting in improved soil removal

L12 ANSWER 16 OF 86 HCA COPYRIGHT 2002 ACS
TI Imparting antibacterial properties to **laundered** fiber products for hospital bedding

L12 ANSWER 17 OF 86 HCA COPYRIGHT 2002 ACS
TI Agglomeration of detergent powders using an alkyl polyglycoside binder

L12 ANSWER 18 OF 86 HCA COPYRIGHT 2002 ACS
TI Stain removal in pre-spotting method with bleach composition and spot **cleaning device**

L12 ANSWER 19 OF 86 HCA COPYRIGHT 2002 ACS
TI Dispensable compositions for cleaning soiled fabrics, dispensing **devices**, and **cleaning** therewith

L12 ANSWER 20 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergent compositions and manufacture thereof and home **machine laundering** and dishwashing using the same

L12 ANSWER 21 OF 86 HCA COPYRIGHT 2002 ACS
TI Hand wash **laundry** detergent compositions containing a combination of surfactants

L12 ANSWER 22 OF 86 HCA COPYRIGHT 2002 ACS
TI Washing solution having a polyelectrolyte-containing **detergent mixed** directly with ozone gas for **laundering** cotton and polyester clothes and textiles

L12 ANSWER 23 OF 86 HCA COPYRIGHT 2002 ACS
TI Method and apparatus for **measurement** of **surface** tension of liquids, especially dishwashing and **laundering** detergents

L12 ANSWER 24 OF 86 HCA COPYRIGHT 2002 ACS
TI **Laundry** washing method

L12 ANSWER 25 OF 86 HCA COPYRIGHT 2002 ACS
TI **Spray**-dried **detergent** or component treated with nonionic surfactant

L12 ANSWER 26 OF 86 HCA COPYRIGHT 2002 ACS
TI Aminoalkyl-modified silicone oil-containing **laundry** rinsing aids and detergent compositions

L12 ANSWER 27 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergents containing water-soluble granular amorphous silicate builders for washing fabrics with reduced ash content

L12 ANSWER 28 OF 86 HCA COPYRIGHT 2002 ACS
TI A **dispensing** device for **detergent** tablets

L12 ANSWER 29 OF 86 HCA COPYRIGHT 2002 ACS
TI **Laundering** dry-**cleanable garments** without shrinkage

L12 ANSWER 30 OF 86 HCA COPYRIGHT 2002 ACS
TI Aqueous detergent compositions for **cleaning** automatic **washing machine**

L12 ANSWER 31 OF 86 HCA COPYRIGHT 2002 ACS
TI Granular **laundry** detergents

L12 ANSWER 32 OF 86 HCA COPYRIGHT 2002 ACS
TI Powdered detergents with fluidity for automatic feeding system and their manufacture

L12 ANSWER 33 OF 86 HCA COPYRIGHT 2002 ACS
TI Granular **laundering** detergent compositions showing good cold water solubility

L12 ANSWER 34 OF 86 HCA COPYRIGHT 2002 ACS
TI Fabric softeners for **laundering garments** in automatic **washing machines**

L12 ANSWER 35 OF 86 HCA COPYRIGHT 2002 ACS
TI Particulate **laundry** detergent compositions containing nonionic surfactants

L12 ANSWER 36 OF 86 HCA COPYRIGHT 2002 ACS
TI Granular **laundry** detergent compositions containing poly(vinylpyrrolidone) as dye transfer inhibitor

L12 ANSWER 37 OF 86 HCA COPYRIGHT 2002 ACS
TI Process of dispensing a high-bulk-density percarbonate-containing **laundry** detergent

L12 ANSWER 38 OF 86 HCA COPYRIGHT 2002 ACS
TI Effervescent detergent powders containing little or no phosphate builder

L12 ANSWER 39 OF 86 HCA COPYRIGHT 2002 ACS
TI A **laundry** detergent composition containing nonphosphate builders

L12 ANSWER 40 OF 86 HCA COPYRIGHT 2002 ACS
TI Sodium tripolyphosphate for detergents showing caking resistance when added to water

L12 ANSWER 41 OF 86 HCA COPYRIGHT 2002 ACS
TI Use of non-aqueous detergent compositions for **laundering**

L12 ANSWER 42 OF 86 HCA COPYRIGHT 2002 ACS

TI **Detergent** powders containing a **dispensing** aid and process for preparing them

L12 ANSWER 43 OF 86 HCA COPYRIGHT 2002 ACS
TI Low-foaming detegents for **machine laundering**

L12 ANSWER 44 OF 86 HCA COPYRIGHT 2002 ACS
TI Low-foaming nonionic **surfactant mixture** containing a glycoside

L12 ANSWER 45 OF 86 HCA COPYRIGHT 2002 ACS
TI Cool-water-soluble soft capsules for encapsulation of detergents and pharmaceuticals

L12 ANSWER 46 OF 86 HCA COPYRIGHT 2002 ACS
TI Treatment of silicate-containing detergent powder with acidic gas for improved dispensibility

L12 ANSWER 47 OF 86 HCA COPYRIGHT 2002 ACS
TI Solid detergent compositions for **laundry machines**

L12 ANSWER 48 OF 86 HCA COPYRIGHT 2002 ACS
TI Solid **detergent** block for uniform **dispensing** in mechanical warewashing or fabric washing

L12 ANSWER 49 OF 86 HCA COPYRIGHT 2002 ACS
TI Granular detergent compositions containing crutched and admixed phosphate builder system for rapid dissolution

L12 ANSWER 50 OF 86 HCA COPYRIGHT 2002 ACS
TI Liquid detergent containing soap and silicone for foam control in **laundering**

L12 ANSWER 51 OF 86 HCA COPYRIGHT 2002 ACS
TI Process for preparing **laundry detergent** powders having improved **dispensing** properties

L12 ANSWER 52 OF 86 HCA COPYRIGHT 2002 ACS
TI Antifoam ingredient comprising silicone oil on porous carrier for addition to **laundry** detergent

L12 ANSWER 53 OF 86 HCA COPYRIGHT 2002 ACS
TI Liquid cleaning products containing sodium tripolyphosphate and having good dispensing properties

L12 ANSWER 54 OF 86 HCA COPYRIGHT 2002 ACS
TI Process for increasing the bulk density of **spray-dried detergents** with a reduced phosphate content

L12 ANSWER 55 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergent powders containing hydrophobic additive for improved dispensing in automatic washers

L12 ANSWER 56 OF 86 HCA COPYRIGHT 2002 ACS
TI Washing and bleaching agents for textiles

L12 ANSWER 57 OF 86 HCA COPYRIGHT 2002 ACS
TI Product for rapid and delayed dispensing of treatment agents into wash liquor in a (dish)**washing machine**

L12 ANSWER 58 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergent paste containing dispersed solids and its addition to a **laundering apparatus** by a dispenser

L12 ANSWER 59 OF 86 HCA COPYRIGHT 2002 ACS
TI Synergistic compositions containing an anionic surfactant and a zwitterionic silicone surfactant

L12 ANSWER 60 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergent composition, especially for dishwashing

L12 ANSWER 61 OF 86 HCA COPYRIGHT 2002 ACS
TI **Laundry** detergent composition containing carbonate builder

L12 ANSWER 62 OF 86 HCA COPYRIGHT 2002 ACS
TI **Dispensable** fabric softeners containing **detergents**

L12 ANSWER 63 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergent compositions

L12 ANSWER 64 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergent composition and process for its production

L12 ANSWER 65 OF 86 HCA COPYRIGHT 2002 ACS
TI **Spray**-dried **detergent** powder

L12 ANSWER 66 OF 86 HCA COPYRIGHT 2002 ACS
TI Cleaning liquid

L12 ANSWER 67 OF 86 HCA COPYRIGHT 2002 ACS
TI Fabric softener agglomerates

L12 ANSWER 68 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergent with suds control

L12 ANSWER 69 OF 86 HCA COPYRIGHT 2002 ACS
TI Liquid heavy duty detergent

L12 ANSWER 70 OF 86 HCA COPYRIGHT 2002 ACS
TI Low-sudsing liquid detergent compositions

L12 ANSWER 71 OF 86 HCA COPYRIGHT 2002 ACS
TI Molecular sieve zeolite-built detergent paste

L12 ANSWER 72 OF 86 HCA COPYRIGHT 2002 ACS
TI Softener-containing granular detergent for textiles

L12 ANSWER 73 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergent compositions

L12 ANSWER 74 OF 86 HCA COPYRIGHT 2002 ACS
TI Powdered or flaked washing compositions adapted to automatic **laundry machines**

L12 ANSWER 75 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergent with an amount of polydimethylsiloxane showing antifoaming activity

L12 ANSWER 76 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergent compositions

L12 ANSWER 77 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergent compositions containing particulate suds regulating agent

L12 ANSWER 78 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergent containing a silicone and having improved solution properties

L12 ANSWER 79 OF 86 HCA COPYRIGHT 2002 ACS
TI Washing powder **mixture** based on **soap** for use in **washing machines**

L12 ANSWER 80 OF 86 HCA COPYRIGHT 2002 ACS
TI Impregnating fiber goods with oil

L12 ANSWER 81 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergent compositions

L12 ANSWER 82 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergent compositions having softening properties

L12 ANSWER 83 OF 86 HCA COPYRIGHT 2002 ACS
TI Dry **mixed** built **detergent** compositions

L12 ANSWER 84 OF 86 HCA COPYRIGHT 2002 ACS
TI Water-soluble packages for **laundry** detergents

L12 ANSWER 85 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergent briquets

L12 ANSWER 86 OF 86 HCA COPYRIGHT 2002 ACS
TI Detergent composition

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FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Feb 15, 2002 (20020215/UP).

=> d bib abs 4,6,7,9,16,19,22,32,35,48,50,57,58,84,85

YOU HAVE REQUESTED DATA FROM FILE 'HCA' - CONTINUE? (Y)/N:y

L12 ANSWER 4 OF 86 HCA COPYRIGHT 2002 ACS
AN 134:73301 HCA
TI Procedure for determining the concentration of a **laundry** detergent, procedure for adding an optimal amount of detergent, and a **washing machine** incorporating these procedures
IN Dietz, Walter; Herden, Rudolf
PA Miele und Cie G.m.b.H. und Co., Germany
SO Ger. Offen., 6 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10029505	A1	20001228	DE 2000-10029505	20000621
	EP 1063340	A1	20001227	EP 2000-112988	20000621
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
PRAI	DE 1999-19928388	A1	19990622		
	DE 1999-19928390	A1	19990622		

AB A surface tension method based on the frequency of bubble formation and bubble pressure is described for detg. the concn. of a **laundry** detergent (contg. surfactant) in an aq. washing liq. and optimizing the amt. of detergent used in a **washing machine** with respect to ecolog. and economic interests. A **wash machine** incorporating a procedure for adding the predetd. optimal amt. of detergent is also claimed.

L12 ANSWER 6 OF 86 HCA COPYRIGHT 2002 ACS
AN 133:336901 HCA
TI Method of **dispensing** a **detergent** composition

IN Vega, Jose Luis; Tcheou, Eric; Busch, Alfred; Baeck, Andre Cesar
PA Procter & Gamble Co., USA
SO Eur. Pat. Appl., 22 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1048715	A1	20001102	EP 1999-870084	19990430
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	EP 1048712	A1	20001102	EP 2000-870024	20000217
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	WO 2000066687	A1	20001109	WO 2000-US10064	20000413
	W: AE, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	WO 2000066689	A1	20001109	WO 2000-US10273	20000413
	W: AE, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1175478	A1	20020130	EP 2000-923423	20000413
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				

PRAI EP 1999-870080 A 19990430
EP 1999-870083 A 19990430
EP 1999-870084 A 19990430
EP 1999-870085 A 19990430
EP 1999-870086 A 19990430
EP 1999-870089 A 19990430
EP 1999-870090 A 19990430
EP 2000-870024 A 20000217
WO 2000-US10273 W 20000413

AB A softening **laundry** detergent comprising clay and **laundry surfactant** is **dispensed** as a tablet through a dispensing **device** in a **washing machine.**

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 7 OF 86 HCA COPYRIGHT 2002 ACS
AN 133:336900 HCA
TI Method of **dispensing detergent** composition
IN Vega, Jose Luis; Tcheou, Eric; Busch, Alfred; Baeck, Andre Cesar
PA Procter & Gamble Co., USA
SO Eur. Pat. Appl., 22 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1048714	A1	20001102	EP 1999-870083	19990430

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

EP 1048712 A1 20001102 EP 2000-870024 20000217

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

WO 2000066691 A1 20001109 WO 2000-US9889 20000413

W: AE, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

WO 2000066687 A1 20001109 WO 2000-US10064 20000413

W: AE, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1175475 A1 20020130 EP 2000-922140 20000413

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

PRAI EP 1999-870080 A 19990430
EP 1999-870083 A 19990430
EP 1999-870084 A 19990430
EP 1999-870085 A 19990430
EP 1999-870086 A 19990430
EP 1999-870089 A 19990430
EP 1999-870090 A 19990430
EP 2000-870024 A 20000217
WO 2000-US9889 W 20000413

AB A softening **laundry** detergent comprising clay and **laundry surfactant** is **dispensed** as a tablet through the drawer of a **washing machine**.

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 9 OF 86 HCA COPYRIGHT 2002 ACS
AN 132:280921 HCA
TI **Laundry** pretreatment or prespotting compositions for improving aqueous **laundry** processing
IN Smith, Kim R.; Armstrong, Carrie L.; Mattia, Paul J.; Levitt, Mark; Hei, Robert D. P.; Wiseth, Wendy M.
PA Ecolab Inc., USA
SO PCT Int. Appl., 23 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000020542	A2	20000413	WO 1999-US22353	19990928
	WO 2000020542	A3	20000803		
	W: AU, BR, CA, CN, JP, MX				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 6204233	B1	20010320	US 1998-167601	19981007
	EP 1123371	A2	20010816	EP 1999-949909	19990928
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
PRAI	US 1998-167601	A	19981007		

WO 1999-US22353 W 19990928
OS MARPAT 132:280921
AB The ability of aq. **laundry** compns. to remove org. hydrophobic soils, e.g., motor oil and particulate carbon, from a **laundry** item, e.g., polyester and/cotton fabric, is substantially improved by prespotting or pretreating such a soiled item with a compn. having a hydrophilic ethoxylate surfactant R(OC2H4)mOH (R = C6-27 alkyl; m < 2) or a **blend** of .gtoreq.2 **surfactant** compns. with a **blended** HLB value of 7-12. The **blend** of **surfactants** with this HLB value penetrates soils and renders the soil more easily removed from the item using aq. **laundry** detergent. The treatment compn. can be used in a liq. or solid form and can be applied to individual **laundry** items in the form of a solid stick or liq. spray prior to introduction to the **laundry machine**. **Laundry** items can also be contacted in the **laundry machine** with the treatment compn. in the form of an aq. presoak, preflush, prewash, or other step prior to the cleaning step. A preferred **laundry machine** comprises an institutional tunnel washer.

L12 ANSWER 16 OF 86 HCA COPYRIGHT 2002 ACS
AN 129:110083 HCA
TI Imparting antibacterial properties to **laundered** fiber products for hospital bedding
IN Matsumoto, Kiyoshi; Banba, Akio
PA Kao Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10168757	A2	19980623	JP 1996-322805	19961203

AB Antibacterial fiber products are prepd. by treating **laundered** fiber products with solns. contg. 0.005-0.5% (on fiber) cationic surfactant bactericides and chelating agents after the final rinsing step of the washing cycle. Hospital pillow cases were **laundered** in a **washing machine**, rinsed, treated with an aq. soln. contg. 10.0% benzalkonium chloride and 11.66% trisodium ethylenediaminetetraacetate (Chelest C) for 10 min at room temp., and dried to give pillow cases exhibiting no. of bacteria growth 2/cm2 on contacting the pillow cases with MRSA-infected patients for 3 wk by a specified test.

L12 ANSWER 19 OF 86 HCA COPYRIGHT 2002 ACS
AN 128:155863 HCA
TI Dispensable compositions for cleaning soiled fabrics, dispensing **devices**, and **cleaning** therewith
IN Ochomogo, Maria
PA Clorox Company, USA
SO PCT Int. Appl., 25 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9804666	A1	19980205	WO 1997-US10335	19970618
	W: AU, BR, CA, JP, KP, MX				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2260921	AA	19980205	CA 1997-2260921	19970618
	AU 9733937	A1	19980220	AU 1997-33937	19970618
	BR 9900542	A	20000822	BR 1999-542	19990204
PRAI	US 1996-690430	A	19960729		
	WO 1997-US10335	W	19970618		

AB The title compns. contain (a) about 0.1-6% foaming surfactants; (b) about

0.5-5% non-volatile, hydrophobic org. solvents of water soly. <about 18% at 25.degree.; (c) an effective amt. of an emulsifier; (d) an effective amt. of a propellant; and (e) the balance as water; wherein the **surfactant** and solvent **mix** and interact with the propellant so as to form an initial foam upon dispensing to collapse without abrasion into a fabric surface and the emulsifier emulsifies the solvent after the collapse. The compn. can also include magnesium lauryl sulfate which facilitates the removal of greasy dirt, corrosion inhibitor, fragrance, and/or an oxidizing agent. Use of a hydrophobic solvent/ **surfactant blend** in the compn. produces a foam that readily penetrates into the fibers of the carpet and emulsify and dislodge the greasy soil particles. A compn. comprised Na lauryl sulfate 2.5, Na lauryl sarcosinate 3.5, dipropylene glycol Pr ether 3, polyethylene glycol monooleate 0.3, 85:15 isobutane-propane propellant 5, volatile amine/sodium benzoate corrosion inhibitor 0.35, fragrance 0.5, Borox 0.75, styrene-maleic anhydride copolymer 3, and water to 100%.

L12 ANSWER 22 OF 86 HCA COPYRIGHT 2002 ACS
AN 128:23954 HCA
TI Washing solution having a polyelectrolyte-containing **detergent** **mixed** directly with ozone gas for **laundering** cotton and polyester clothes and textiles
IN Nishioka, Yukiko; Shinjo, Ryoichi; Ishii, Yoshihiro; Yamanaka, Tadao
PA Ebara Corp., Japan
SO U.S., 8 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 5688289	A	19971118	US 1996-637342	19960425
PRAI JP 1995-129614		19950428		

AB The title method of **laundering** comprises providing a **washing machine** having ~~a tub with a fixed outer shell and an inner cylinder, that is rotatably supported on a horizontal~~ rotating shaft and that has many orifices in the outer peripheral wall through which a washing soln. can pass; putting the clothes and textiles into the inner cylinder; charging the outer shell with a washing soln. having a polyelectrolyte-contg. detergent; and **laundering** the clothes and textiles with ozone gas from an ozonizer, introduced from an ozone gas supply port directly into the washing soln. at .apprx.40-50.degree.. Severe protein soiling of the collar of shirts and yellowing can be removed in a regular washing cycle ~~without employing any preliminary or post-treatments~~ and can be adapted to existing com. **washing machines**.

L12 ANSWER 32 OF 86 HCA COPYRIGHT 2002 ACS
AN 124:59977 HCA
TI Powdered detergents with fluidity for automatic feeding system and their manufacture
IN Kawabata, Osamu
PA Shibuya Yushi Kk, Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 07242899	A2	19950919	JP 1994-36868	19940308
JP 2865548	B2	19990308		

AB Title particles, showing inherent coagulation property in contacting with water, are coated by solid water-sol. polymers. The particles are prepd. by **mixing** the solid powd. **detergents** and water-sol. polymers having m.p. .gtoreq.50.degree., which are melted at temp. lower than m.p. of the detergents, heating at a temp. for melting only the

polymers, coating the polymers on the particles in stirring, and cooling. Thus, 8 kg **spray**-dried powd. **soap** was **mixed** with 450 g PEG 2000 at 80.degree. and cooled to give title particle, which was used in automatic **wash machine** having automatic powder-feeding system to show prevention of coagulation in the feeder and complete dissoln. in water.

L12 ANSWER 35 OF 86 HCA COPYRIGHT 2002 ACS
AN 122:84310 HCA
TI Particulate **laundry** detergent compositions containing nonionic surfactants
IN Carter, Malcolm Nigel Alan; Houghton, Mark Philip; Hull, Michael
PA Unilever PLC, UK; Unilever N. V.
SO PCT Int. Appl., 37 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9411488	A1	19940526	WO 1993-GB2346	19931115
W: AT, AU, BB, BG, BR, BY, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, LV, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, UZ, VN				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
AU 9454313	A1	19940608	AU 1994-54313	19931115
EP 670888	A1	19950913	EP 1993-924769	19931115
EP 670888	B1	19980204		
R: CH, DE, ES, FR, GB, IT, LI, NL, SE				
JP 08503241	T2	19960409	JP 1993-511872	19931115
ES 2111778	T3	19980316	ES 1993-924769	19931115
PRAI GB 1992-24014	A	19921116		
GB 1992-26246	A	19921216		
WO 1993-GB2346	W	19931115		

AB The title compns. have bulk d. .gtoreq.600 g/L, contain a nonionic surfactant comprising an ethoxylated C8-C15 aliph. alc. which has degree of ethoxylation 2-6 and is prepd. from alcs. contg. .gtoreq.40% branched alcs., and are substantially free of low-ethoxylated nonionic surfactant prepd. from alcs. contg. <40% branched alcs. The nonionic **surfactant** improves the **dispensability** and the soly. and/or rate of dissoln. of the compn. in an automatic **washing machine** and also improves the detergency.

L12 ANSWER 48 OF 86 HCA COPYRIGHT 2002 ACS
AN 113:154632 HCA
TI Solid **detergent** block for uniform **dispensing** in mechanical warewashing or fabric washing
IN Van den Brom, Guido Clemens; Pritchard, Norman Jason
PA Unilever N. V., Neth.; Unilever PLC
SO Eur. Pat. Appl., 6 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 375022	A2	19900627	EP 1989-203144	19891211
EP 375022	A3	19910814		
EP 375022	B1	19950315		
R: CH, DE, ES, FR, GB, IT, LI, NL, SE				
ES 2069576	T3	19950516	ES 1989-203144	19891211
AU 8946962	A1	19900628	AU 1989-46962	19891219
AU 624204	B2	19920604		
FI 95927	B	19951229	FI 1989-6073	19891219
FI 95927	C	19960410		
ZA 8909844	A	19910828	ZA 1989-9844	19891221

PRAI GB 1988-30010 19881222
AB A granular compn. contg. an alk. agent 5-80, a builder 5-70, and a Cl bleach 0-15% is compressed at 3-30 kN/cm2 in a mold to form a block weighing 0.2-10 kg. The components of the block are stable during storage and are uniformly dispensed into a mech. washer when the block is sprayed with water. A mixt. of Na5P3O10.6H2O 30.5, NaOH 59.0, polyacrylate 5.0, Na dichloroisocyanurate 3.5, and Triton DF 12 2.0% was compressed at 5.3-6.4 kN/cm2 in a mold to prep. a block weighing 4.3 kg.

L12 ANSWER 50 OF 86 HCA COPYRIGHT 2002 ACS
AN 113:99901 HCA
TI Liquid detergent containing soap and silicone for foam control in **laundering**
IN Wilsberg, Heinz Manfred
PA Henkel K.-G.a.A., Fed. Rep. Ger.
SO Eur. Pat. Appl., 6 pp.
CODEN: EPXXDW
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 363763	A1	19900418	EP 1989-118133	19890929
R: ES, GR				

PRAI DE 1988-3814181 19881007
AB Liq. detergent compns. based on anionic and nonionic surfactants contain soap and a siloxane to control foaming during **machine** and hand **laundering** and rinsing of textiles. The soap and siloxane do not cause unsatisfactory increases in viscosity. A compn. contained water, 12% Na alkylbenzenesulfonate, 2% Na C12-14-alkyl ether sulfate, 5% ethoxylated C13-15 oxoalcs., 2% C12-18 fatty acids, 0.6% NaOH, 1.5% siloxane defoamer, and 0.3% ethylene glycol stearate.

L12 ANSWER 57 OF 86 HCA COPYRIGHT 2002 ACS
AN 111:80382 HCA
TI Product for rapid and delayed dispensing of treatment agents into wash liquor in a (dish)**washing machine**
IN Anderson, Stephen; Lloyd, John; Nehru, Sunil Kumar; Newbold, Geoffrey; Wraige, Douglas
PA Unilever PLC, UK
SO S. African, 25 pp.
CODEN: SFXXAB
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI ZA 8701643	A	19881130	ZA 1987-1643	19870306

PRAI GB 1986-5734 19860307
AB The title product comprises a sachet having .gtoreq.2 compartments including a first compartment which has an opening seal and/or walls of water-permeable material and releases a treatment agent (e.g., **laundry** detergent) into wash liquor during <3 min and a second compartment which is formed of water-permeable material and is coated or enclosed to delay the release of a treatment agent (e.g., bleaching agent) for .gtoreq.5 min.

L12 ANSWER 58 OF 86 HCA COPYRIGHT 2002 ACS
AN 110:215249 HCA
TI Detergent paste containing dispersed solids and its addition to a **laundering apparatus** by a dispenser
IN Amberg, Guenther; Bechstedt, Wolfgang; Schulz, Paul; Trabitzsch, Uwe
PA Henkel K.-G.a.A., Fed. Rep. Ger.
SO Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW
DT Patent
LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 295525	A2	19881221	EP 1988-109014	19880606
	EP 295525	A3	19900328		
	EP 295525	B1	19930203		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	DE 3719906	A1	19881229	DE 1987-3719906	19870615
	AT 85372	E	19930215	AT 1988-109014	19880606
	ES 2040780	T3	19931101	ES 1988-109014	19880606
	DK 8803245	A	19881216	DK 1988-3245	19880614
	DK 167624	B1	19931129		
	FI 86084	B	19920331	FI 1988-2833	19880614
	FI 86084	C	19920710		
	JP 01026778	A2	19890130	JP 1988-147894	19880615
	US 4889644	A	19891226	US 1988-207610	19880615
	KR 9703076	B1	19970314	KR 1988-7196	19880615
PRAI	DE 1987-3719906	A	19870615		
	EP 1988-109014	A	19880606		

AB A paste comprises a liq. phase which is based on a nonionic surfactant and is free of water, org. solvents, and hydrotropes and a dispersed solid phase which contains alk. compds., sequestering agents, additives, and, optionally, anionic surfactants and has av. particle size 5-40 .mu.m. The paste is dild. with water to the gel stage or beyond before addn. to an app. which dispenses the dild. compn. into water in a **laundering** app. The use of the paste avoids problems assocd. with liq. or powd. detergent compns., e.g., the handling and storage of large vols. of inert liq., slow dissoln. of powders, and difficulties in dispensing. A stable, pumpable paste was prepd. by milling a 1:1 ethoxylated (3 mol) C12-14 fatty alc.-ethoxylated (5 mol) C12-14 fatty alc. mixt. (m. 5.degree.) 24.0, Na dodecylbenzenesulfonate 2.0, N(CH2CO2Na)3 8.5, Na2SiO3 55.0, Na5P3O10 8.5, cellulose ether 1.5, and optical brightener 0.5% to give av. particle size 18.6 .mu.m and adding 0.1% dye. Dilg. 1 part paste with 1 part water gave a conc. suitable for dispensing.

L12 ANSWER 84 OF 86 HCA COPYRIGHT 2002 ACS
AN 67:65185 HCA
TI Water-soluble packages for **laundry** detergents
IN Friedman, Jack
SO U.S., 5 pp.
CODEN: USXXAM
DT Patent
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3322674		19670530	US	19640626

AB Continuation-in-part of U.S. 3,186,869 (CA 63: 5866h). A **detergent mixt.** contg. a bleaching agent is enclosed in a container relatively inert to the contents but readily sol. in hot H2O. The container is of a polymeric film-forming material, e.g. poly(vinyl alc.) (I) or Me cellulose, its inner surface being coated with a thin H2O-dispersible barrier. The latter may be a wax of high m.p., a sapond. fatty acid, or various mixt. of such materials, and is nonreactive to the bleaching agent. Thus, a container was formed of I of thickness 2 mils. The coating was a mixt. of glycerol monostearate (II) 85, oleic acid 5, and triethanolamine 10 wt. %, II presumably functioning as the filming material and the other 2 components in combination as an emulsifier. The coating mixt., preferably mixed at 130.degree.F., was applied to the container film by passing the latter over rollers running in a bath of the melted mixt. at 150-180.degree.F. The coating, which solidified almost immediately upon application, was .apprx.0.002 in. thick. The coated film may be fed to a continuous package-forming and filling operation to produce packages of dimensions 2.25 .times. 4.5 in. with a heat-sealed margin of .apprx.0.375 in. The mixt. that fills the bags may include a **soap** or nonoxidizable syndet **mixed** with the bleach (10-35 wt. %), an alk. material (25-35%), a bleaching agent (.gtoreq.5%),

a washing aid (25-35%), and a water softener-sequestering agent (0.1-0.25%). The bleaching agent is preferably a Cl-contg. solid that releases its Cl in aq. soln. Suitable bleaching compds. include dichloroisocyanuric acid and its salts, LiClO, and KClO. The package, which is storage stable, releases its contents quickly in a **washing machine** contg. water at 130.degree..

L12 ANSWER 85 OF 86 HCA COPYRIGHT 2002 ACS
AN 64:105823 HCA
OREF 64:20005a-d
TI Detergent briquets
IN Schulerud, Albert L.; Austin, Amory E. Jr.; Speckhals, Kenneth H.
PA Colgate-Palmolive Co.
SO 7 pp.
DT Patent
LA Unavailable
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3240712		19660315	US	19601107
	DE 1213079			DE	

AB A normally solid, H2O-sol. anionic org. **detergent** (I) is **mixed** with a normally solid H2O-sol. inorg. salt (II) to produce a detergent contg. .ltoreq.21% moisture, 4-12% H2O is added to give 4-25% total moisture, the particles are pressed to a lightly-compacted, readily disintegrable solid briquet at 3-100 lb./in.2, and 1-5% of a H2O-sol. poly(vinyl alc.) (III) is applied to the briquet. Preferably, 25-35% I, e.g., Na alkylbenzenesulfonate (IV), 30-55% II, e.g., Na tripolyphosphate, and 13-19% H2O are used. In an example, a crutcher mix contg. Na tridecylbenzenesulfonate 19, IV 27.1, Na silicate (Na2O/SiO2 4.3) 4.9, Na2SO4 12.2, other adjuvants 1.1, and H2O 35.7% was mixed at 165.degree. for 0.5 hr. and sprayed into heated drying gas at 500.degree.F. The spray-dried particles, screened through an 8-mesh screen bulk d. .apprx.0.4 g./cc., 8.5% H2O, and pH 10 (1% soln. in H2O), were cooled, sprayed with H2O while tumbling for 5 min., and tumbled for 10-15 min. more without breaking the particles (8-100 mesh). About 5 min. later, the detergent (with agglomerates >10 mesh screened out), 14% H2O, was compacted at 18 lb./in.2 to cylindrical briquets, d. 0.53 g./cc., av. wt. 53.9 g. Within 1 hr. after briquetting, the tablets were sprayed with a soln. heated to 150.degree.F. and contg. 17% III [(100% polymerized, 20% poly(vinyl acetate)] 1% NaHCO3, 25% glycerol, 1.4% alkylarylsulfonate, and the balance H2O to give 1.9% III and an av. film thickness of 0.4 mm. The aq. solvent in the coating soln. was evapd. by ir heating to give briquets with 14% moisture. They passed the test for resistance to breaking and abrasion by being dropped 1 ft. onto a hard surface without damage, and disintegrated in 20-30 sec. in a **washing machine**.
Wash tests showed that the briquets **washed clothes** whiter than the detergent from which the briquets were made.

=> d his

(FILE 'HOME' ENTERED AT 16:46:31 ON 20 FEB 2002)
CHARGED TO COST=0592087

FILE 'HCA' ENTERED AT 16:46:44 ON 20 FEB 2002
CHARGED TO COST=0592087
L1 15939 S LAUND?
L2 2117 S (GARMENT? OR CLOTH?)(3A)(WASH? OR CLEAN?)
L3 17728 S L1 OR L2
L4 1975302 S DETERG? OR SOAP? OR SURFAC? OR (USE OR STOCK)()(SOLUT? OR SOL
L5 1147 S L3 AND L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX?
L6 180 S L5 AND (INJECT? OR PRE()SPOT? OR SPRAY?)
L7 7 S L6 NOT P/DT
L8 1378 S L3 AND L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX?
L9 1371 S L8 NOT L7

```
L10          98 S L9 AND (L1 OR WASH? OR CLEAN?)(2A)(MACHINE OR EQUIP? OR DEVIC
L11          12 S L10 NOT P/DT
L12          86 S L10 NOT L11

     FILE 'STNGUIDE' ENTERED AT 17:04:04 ON 20 FEB 2002
CHARGED TO COST=0592087

     FILE 'HCA' ENTERED AT 17:11:59 ON 20 FEB 2002
CHARGED TO COST=0592087

     FILE 'STNGUIDE' ENTERED AT 17:12:01 ON 20 FEB 2002
CHARGED TO COST=0592087

=> s 19 not 110

'DT' IS NOT A VALID FIELD CODE
             1 LAUND?
             0 GARMENT?
             0 CLOTH?
             1 WASH?
             3 CLEAN?
             0 (GARMENT? OR CLOTH?)(3A)(WASH? OR CLEAN?)
             0 DETERG?
             0 SOAP?
            14 SURFAC?
            78 USE
             8 USES
            84 USE
                (USE OR USES)
             2 STOCK
             2 SOLUT?
             0 SOLN#
             7 LIQ?
             1 METER?
            12 MEASUR?
             0 DISPENS?
             0 BLEND?
             9 MIX?
             0 INJECT?
            12 PRE
             4 PRES
            16 PRE
                (PRE OR PRES)
             0 SPOT?
             1 SPRAY?
             0 L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX? OR INJECT
               ? OR PRE(W)SPOT? OR SPRAY?)
             1 LAUND?
             0 GARMENT?
             0 CLOTH?
             1 WASH?
             3 CLEAN?
             0 (GARMENT? OR CLOTH?)(3A)(WASH? OR CLEAN?)
             0 DETERG?
             0 SOAP?
            14 SURFAC?
            78 USE
             8 USES
            84 USE
                (USE OR USES)
             2 STOCK
             2 SOLUT?
             0 SOLN#
             7 LIQ?
             1 METER?
            12 MEASUR?
             0 DISPENS?
```

```
 0 BLEND?
 9 MIX?
 0 L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX?)
 0 INJECT?
12 PRE
 4 PRES
16 PRE
     (PRE OR PRES)
 0 SPOT?
 0 PRE(W)SPOT?
 1 SPRAY?
 0 P/DT
 1 LAUND?
 0 GARMENT?
 0 CLOTH?
 1 WASH?
 3 CLEAN?
 0 (GARMENT? OR CLOTH?)(3A)(WASH? OR CLEAN?)
 0 DETERG?
 0 SOAP?
14 SURFAC?
78 USE
 8 USES
84 USE
     (USE OR USES)
 2 STOCK
 2 SOLUT?
 0 SOLN#
 7 LIQ?
 1 METER?
12 MEASUR?
 0 DISPENS?
 0 BLEND?
 9 MIX?
 0 INJECT?
12 PRE
 4 PRES
16 PRE
     (PRE OR PRES)
 0 SPOT?
 1 SPRAY?
 0 L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX? OR INJECT
   ? OR PRE(W)SPOT? OR SPRAY?)
 1 LAUND?
 0 GARMENT?
 0 CLOTH?
 1 WASH?
 3 CLEAN?
 0 (GARMENT? OR CLOTH?)(3A)(WASH? OR CLEAN?)
 0 DETERG?
 0 SOAP?
14 SURFAC?
78 USE
 8 USES
84 USE
     (USE OR USES)
 2 STOCK
 2 SOLUT?
 0 SOLN#
 7 LIQ?
 1 METER?
12 MEASUR?
 0 DISPENS?
 0 BLEND?
 9 MIX?
 0 L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX?)
 0 INJECT?
```

```
            12 PRE
             4 PRES
            16 PRE
                 (PRE OR PRES)
             0 SPOT?
             0 PRE(W)SPOT?
             1 SPRAY?
             0 P/DT
             1 LAUND?
             1 WASH?
             3 CLEAN?
             4 MACHINE
             1 MACHINES
             4 MACHINE
                 (MACHINE OR MACHINES)
            17 EQUIP?
            13 DEVIC?
             0 DEV#
             0 APPT#
             1 APPARAT?
             0 (L1 OR WASH? OR CLEAN?)(2A)(MACHINE OR EQUIP? OR DEVIC? OR DEV#
               OR APPT# OR APPARAT?)
L13          0 L9 NOT L10

=> del l13 y


=> fil hca

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FILE COVERS 1907 - 14 Feb 2002 VOL 136 ISS 8
FILE LAST UPDATED: 14 Feb 2002  (20020214/ED)

  This file contains CAS Registry Numbers for easy and accurate
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Numbers with the P indicator executed between 12/27/01 and 1/23/02 may
be incomplete.  See the NEWS message on this topic for more information.

=> s l9 not l10

L13       1273 L9 NOT L10
```

```
=> s l13 and (automatic? or door)(2w)(dispens? or inject? or meter? or pump? or supply? or
add? or spray? or dispers? or distrib? or portion? or discharg?)

         82076 AUTOMATIC?
          3839 DOOR
          2619 DOORS
          5450 DOOR
                 (DOOR OR DOORS)
         11489 DISPENS?
        578620 INJECT?
         31059 METER?
        158558 PUMP?
        133027 SUPPLY?
       2738823 ADD?
        198840 SPRAY?
        491586 DISPERS?
        969545 DISTRIB?
        253922 PORTION?
        238998 DISCHARG?
          2460 (AUTOMATIC? OR DOOR)(2W)(DISPENS? OR INJECT? OR METER? OR PUMP?
               OR SUPPLY? OR ADD? OR SPRAY? OR DISPERS? OR DISTRIB? OR PORTION?
                OR DISCHARG?)
L14          3 L13 AND (AUTOMATIC? OR DOOR)(2W)(DISPENS? OR INJECT? OR METER?
               OR PUMP? OR SUPPLY? OR ADD? OR SPRAY? OR DISPERS? OR DISTRIB?
               OR PORTION? OR DISCHARG?)

=> d ti 1-3


L14  ANSWER 1 OF 3  HCA  COPYRIGHT 2002 ACS
TI   Washing and cleaning composition

L14  ANSWER 2 OF 3  HCA  COPYRIGHT 2002 ACS
TI   Washing with liquid detergent components

L14  ANSWER 3 OF 3  HCA  COPYRIGHT 2002 ACS
TI   Liquid detergent preparation


=> d bib abs 1-3


L14  ANSWER 1 OF 3  HCA  COPYRIGHT 2002 ACS
AN   101:173483  HCA
TI   Washing and cleaning composition
IN   Trabitzsch, Uwe; Grund, Helmut
PA   Henkel K.-G.a.A., Fed. Rep. Ger.
SO   Ger. Offen., 21 pp.
     CODEN: GWXXBX
DT   Patent
LA   German
FAN.CNT 1
     PATENT NO.          KIND  DATE           APPLICATION NO.   DATE
     ---------------     ----  --------       ---------------   --------
PI   DE 3301577          A1    19840719       DE 1983-3301577   19830119
     DK 8305978          A     19840720       DK 1983-5978      19831223
     EP 118663           A1    19840919       EP 1984-100219    19840111
     EP 118663           B1    19861126
         R:  AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE
     AT 23876            E     19861215       AT 1984-100219    19840111
     US 4581153          A     19860408       US 1984-571026    19840116
     JP 59138300         A2    19840808       JP 1984-4948      19840117
     BR 8400196          A     19840821       BR 1984-196       19840118
     ZA 8400386          A     19840829       ZA 1984-386       19840118
PRAI DE 1983-3301577           19830119
     EP 1984-100219            19840111
```

AB Powd. detergents are prepd. which contain zeolite NaA or NaX as well as xanthan gum [11138-66-2] which is a dispersant for the zeolite and permits the prepn. of stable **stock solns**. suitable for **automatic metering** into washing app. Thus, a powd. detergent comprising Sasil 25.0, Kelzan 1.0, alkylbenzenesulfonate 1.0, nonicnic surfactants 10, Na2CO3 20, Na2SiO3 28.0, and Na2SO4-water-additives 15% was used to prep. a stock soln. contg. 10% detergent. The soln. was stable for >24 h.

L14 ANSWER 2 OF 3 HCA COPYRIGHT 2002 ACS
AN 87:119655 HCA
TI Washing with liquid detergent components
AU Maahs, G.; Pohl, H.; Rombusch, K.; Scholz-Weigl, Sigrid; Stache, H.
CS Chem. Werke, Huels A.-G., Marl, Ger.
SO Tenside Deterg. (1977), 14(4), 211-14
CODEN: TSDTAZ
DT Journal
LA German
AB Solid textiles were **laundered** by a process in which liq. components (surfactant, builder, bleaching agent, bleaching activator, softening agent) were metered individually into the washing soln. to give satisfactory cleaning of the textiles. Savings in water and energy were possible, but the combination of detergent components for optimum cleaning was different for various textiles and washing conditions.

L14 ANSWER 3 OF 3 HCA COPYRIGHT 2002 ACS
AN 86:6587 HCA
TI Liquid detergent preparation
PA Berol Kemi AB, Swed.
SO Neth. Appl., 10 pp.
CODEN: NAXXAN
DT Patent
LA Dutch
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	NL 7513646	A	19760528	NL 1975-13646	19751121
	SE 7414792	A	19760526	SE 1974-14792	19741125
	SE 408714	C	19791011		
	SE 408714	B	19790702		
	US 4018696	A	19770419	US 1975-633899	19751120
	BE 835803	A1	19760316	BE 1975-162060	19751121
	FI 7503281	A	19760526	FI 1975-3281	19751121
	FI 59264	B	19810331		
	FI 59264	C	19810710		
	DK 7505248	A	19760526	DK 1975-5248	19751121
	DK 151230	B	19871116		
	DK 151230	C	19880425		
	NO 7503929	A	19760526	NO 1975-3929	19751121
	NO 143581	B	19801201		
	NO 143581	C	19810311		
	FR 2292037	A1	19760618	FR 1975-35730	19751121
	FR 2292037	B1	19780623		
	JP 51076306	A2	19760701	JP 1975-140717	19751121
	JP 53035812	B4	19780929		
	ZA 7507318	A	19761124	ZA 1975-7318	19751121
	AU 7586857	A1	19770512	AU 1975-86857	19751121
	AT 7509888	A	19771015	AT 1975-8888	19751121
	CA 1040505	A1	19781017	CA 1975-240194	19751121
	GB 1531496	A	19781108	GB 1975-47994	19751121
	SU 655325	D	19790330	SU 1975-2191055	19751121
PRAI	SE 1974-14792		19741125		

AB Stable liq. detergents contained water, alkoxylated fatty alcs., and a (RO)2P(O)ONa-ROP(O)(ONa)2 mixt. with R = C9-11 alkyl and were suitable for addn. to **laundering** solns. by **automatic metering** app. Thus, a detergent comprised ethoxylated (8 moles) C14-20 alcs. 5, Me(CH2)9OP(O)(ONa)2 [14245-44-4] 4, [Me(CH2)9O]2P(O)ONa

[16686-86-5] 1, N(CH2CO2Na)3 12, and water 78%.

=> fil stnguide

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LAST RELOADED: Feb 15, 2002 (20020215/UP).

=> d his

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CHARGED TO COST=0592087

FILE 'HCA' ENTERED AT 16:46:44 ON 20 FEB 2002
CHARGED TO COST=0592087
L1 15939 S LAUND?
L2 2117 S (GARMENT? OR CLOTH?)(3A)(WASH? OR CLEAN?)
L3 17728 S L1 OR L2
L4 1975302 S DETERG? OR SOAP? OR SURFAC? OR (USE OR STOCK)()(SOLUT? OR SOL
L5 1147 S L3 AND L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX?
L6 180 S L5 AND (INJECT? OR PRE()SPOT? OR SPRAY?)
L7 7 S L6 NOT P/DT
L8 1378 S L3 AND L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX?
L9 1371 S L8 NOT L7
L10 98 S L9 AND (L1 OR WASH? OR CLEAN?)(2A)(MACHINE OR EQUIP? OR DEVIC
L11 12 S L10 NOT P/DT
L12 86 S L10 NOT L11

FILE 'STNGUIDE' ENTERED AT 17:04:04 ON 20 FEB 2002
CHARGED TO COST=0592087

FILE 'HCA' ENTERED AT 17:11:59 ON 20 FEB 2002
CHARGED TO COST=0592087

FILE 'STNGUIDE' ENTERED AT 17:12:01 ON 20 FEB 2002
CHARGED TO COST=0592087

FILE 'HCA' ENTERED AT 17:13:52 ON 20 FEB 2002
CHARGED TO COST=0592087
L13 1273 S L9 NOT L10
L14 3 S L13 AND (AUTOMATIC? OR DOOR)(2W)(DISPENS? OR INJECT? OR METER

FILE 'STNGUIDE' ENTERED AT 17:20:25 ON 20 FEB 2002
CHARGED TO COST=0592087

=> fil hca;s l13 not l14

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FILE LAST UPDATED: 14 Feb 2002 (20020214/ED)

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```
L15       1270 L13 NOT L14

=> s l15 and simultan?(2a)(dispens? or fill? or inject? or meter? or pump?)

        316693 SIMULTAN?
         11489 DISPENS?
        308929 FILL?
        578620 INJECT?
         31059 METER?
        158558 PUMP?
          5335 SIMULTAN?(2A)(DISPENS? OR FILL? OR INJECT? OR METER? OR PUMP?)
L16          0 L15 AND SIMULTAN?(2A)(DISPENS? OR FILL? OR INJECT? OR METER? OR
               PUMP?)

=> s l15 and simultan?

        316693 SIMULTAN?
L17         18 L15 AND SIMULTAN?

=> d ti 1-18;fil stnguide


L17  ANSWER 1 OF 18  HCA  COPYRIGHT 2002 ACS
TI   Antisoling finish for textiles for use in health care institutions

L17  ANSWER 2 OF 18  HCA  COPYRIGHT 2002 ACS
TI   Corrosion inhibitor solutions applied with wiping-cloth package
     in cleaning and degreasing of metal surface

L17  ANSWER 3 OF 18  HCA  COPYRIGHT 2002 ACS
TI   Manufacture of hygroscopic nonwoven fabrics of melt-blown fibers

L17  ANSWER 4 OF 18  HCA  COPYRIGHT 2002 ACS
TI   Measurement of zeolite, silicate, and phosphate in laundry
     detergent products by inductively coupled plasma atomic emission
     spectrometry

L17  ANSWER 5 OF 18  HCA  COPYRIGHT 2002 ACS
TI   Neutralization and bleaching of anionic surfactants for use in granular
     detergent compositions

L17  ANSWER 6 OF 18  HCA  COPYRIGHT 2002 ACS
TI   Agglomeration of high active anionic surfactant pastes to form granules
     useful in detergent compositions
```

L17 ANSWER 7 OF 18 HCA COPYRIGHT 2002 ACS
TI Method of manufacture of ternary mixture of sulfonate and sulfate surfactants

L17 ANSWER 8 OF 18 HCA COPYRIGHT 2002 ACS
TI Method of manufacture of mixture of sulfonate and sulfate surfactants

L17 ANSWER 9 OF 18 HCA COPYRIGHT 2002 ACS
TI **Laundry** detergents containing bleach

L17 ANSWER 10 OF 18 HCA COPYRIGHT 2002 ACS
TI Detergent compositions

L17 ANSWER 11 OF 18 HCA COPYRIGHT 2002 ACS
TI **Laundering** compositions

L17 ANSWER 12 OF 18 HCA COPYRIGHT 2002 ACS
TI Additive for granular washing and cleaning compositions

L17 ANSWER 13 OF 18 HCA COPYRIGHT 2002 ACS
TI **Detergent** compositions containing **mixtures** of anionic and nonionic detergent-active materials

L17 ANSWER 14 OF 18 HCA COPYRIGHT 2002 ACS
TI Fabric softening composition

L17 ANSWER 15 OF 18 HCA COPYRIGHT 2002 ACS
TI Process for making detergent compositions

L17 ANSWER 16 OF 18 HCA COPYRIGHT 2002 ACS
TI Softening additive and detergent composition

L17 ANSWER 17 OF 18 HCA COPYRIGHT 2002 ACS
TI Combined washing and softening composition

L17 ANSWER 18 OF 18 HCA COPYRIGHT 2002 ACS
TI The value of silicate of soda as a detergent. III. Siliceous silicate in water containing calcium bicarbonate or carbon dioxide

FILE 'STNGUIDE' ENTERED AT 17:23:57 ON 20 FEB 2002
USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT
COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY, JAPAN SCIENCE AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE
CHARGED TO COST=0592087

FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Feb 15, 2002 (20020215/UP).

=> d bib abs 1,17

YOU HAVE REQUESTED DATA FROM FILE 'HCA' - CONTINUE? (Y)/N:y

L17 ANSWER 1 OF 18 HCA COPYRIGHT 2002 ACS
AN 133:5814 HCA
TI Antisoling finish for textiles for use in health care institutions
IN Iordache, Nicolae; Vranceanu, Niculina; Gheorghiu, Florin; Dinculescu, Verocika; Acsente, Niculina
PA S.C. Sanbuftex - S.A., Buftea, Rom.
SO Rom., 4 pp.
CODEN: RUXXA3
DT Patent

LA Romanian
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	RO 110714	B1	19960329	RO 1995-1642	19950920

AB Cellulosic fabrics are treated in a bath contg. 1-3 g/L sequestering agent mixt. and 0.5-1.5 g/L surfactants, e.g., wetting agents, detergents, dispersants, stabilizers, for 15-30 min at 50-60.degree., followed by alkali treatment **simultaneous** with bleaching in a bath contg. 3-4 g/L NaOH and 6-8 mL/L H2O2 35%, for 1-2 h at 98.degree.. The ratio of sequestering agent-**surfactant mixt.** to NaOH-H2O2 bath is 1:2. After treatment, the fabric is washed, treated with brightening agents, and softeners in conventional manner. The textiles thus treated have superior hydrophilicity and ease of cleansing, retention of whiteness, and uniform appearance after multiple **laundering**.

L17 ANSWER 17 OF 18 HCA COPYRIGHT 2002 ACS
AN 82:158154 HCA
TI Combined washing and softening composition
IN Grecsek, John J.
PA Colgate-Palmolive Co.
SO Ger. Offen., 24 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2433079	A1	19750206	DE 1974-2433079	19740710
	FR 2236925	A1	19750207	FR 1974-24119	19740711
	FR 2236925	B1	19780331		
	AU 7471138	A1	19760115	AU 1974-71138	19740711
	AU 496839	B2	19781102		
	BE 817610	A1	19741104	BE 1974-146521	19740712
	DK 7403770	A	19750303	DK 1974-3770	19740712
	DK 150987	B	19871005		
	DK 150987	C	19880215		
PRAI	US 1973-378881		19730713		

AB **Mixts.** of anionic **detergents** 5-20, nonionic detergents 1-10, cationic quaternary ammonium compd. 2-10, and Na tripolyphosphate (I) 10-45% were used for **simultaneous laundering** and softening of textiles. Thus, a detergent comprised Na tridecylbenzenesulfonate [26248-24-8] 12, ethoxylated (11 moles) C14-15 fatty alcs. 4, dimethyldistearylammonium chloride [107-64-2] 5, I 33, Na silicate 7.5, CM-cellulose 0.5, Na sulfate 30, and water 8%.

=> d his

(FILE 'HOME' ENTERED AT 16:46:31 ON 20 FEB 2002)
CHARGED TO COST=0592087

FILE 'HCA' ENTERED AT 16:46:44 ON 20 FEB 2002
CHARGED TO COST=0592087
L1 15939 S LAUND?
L2 2117 S (GARMENT? OR CLOTH?)(3A)(WASH? OR CLEAN?)
L3 17728 S L1 OR L2
L4 1975302 S DETERG? OR SOAP? OR SURFAC? OR (USE OR STOCK)()(SOLUT? OR SOL
L5 1147 S L3 AND L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX?
L6 180 S L5 AND (INJECT? OR PRE()SPOT? OR SPRAY?)
L7 7 S L6 NOT P/DT
L8 1378 S L3 AND L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX?
L9 1371 S L8 NOT L7
L10 98 S L9 AND (L1 OR WASH? OR CLEAN?)(2A)(MACHINE OR EQUIP? OR DEVIC
L11 12 S L10 NOT P/DT
L12 86 S L10 NOT L11

```
     FILE 'STNGUIDE' ENTERED AT 17:04:04 ON 20 FEB 2002
CHARGED TO COST=0592087

     FILE 'HCA' ENTERED AT 17:11:59 ON 20 FEB 2002
CHARGED TO COST=0592087

     FILE 'STNGUIDE' ENTERED AT 17:12:01 ON 20 FEB 2002
CHARGED TO COST=0592087

     FILE 'HCA' ENTERED AT 17:13:52 ON 20 FEB 2002
CHARGED TO COST=0592087
L13         1273 S L9 NOT L10
L14            3 S L13 AND (AUTOMATIC? OR DOOR)(2W)(DISPENS? OR INJECT? OR METER

     FILE 'STNGUIDE' ENTERED AT 17:20:25 ON 20 FEB 2002
CHARGED TO COST=0592087

     FILE 'HCA' ENTERED AT 17:21:54 ON 20 FEB 2002
CHARGED TO COST=0592087
L15         1270 S L13 NOT L14
L16            0 S L15 AND SIMULTAN?(2A)(DISPENS? OR FILL? OR INJECT? OR METER?
L17           18 S L15 AND SIMULTAN?

     FILE 'STNGUIDE' ENTERED AT 17:23:57 ON 20 FEB 2002
CHARGED TO COST=0592087

     FILE 'HCA' ENTERED AT 17:25:35 ON 20 FEB 2002
CHARGED TO COST=0592087

     FILE 'STNGUIDE' ENTERED AT 17:25:38 ON 20 FEB 2002
CHARGED TO COST=0592087

=> d his


     (FILE 'HOME' ENTERED AT 16:46:31 ON 20 FEB 2002)
CHARGED TO COST=0592087

     FILE 'HCA' ENTERED AT 16:46:44 ON 20 FEB 2002
CHARGED TO COST=0592087
L1         15939 S LAUND?
L2          2117 S (GARMENT? OR CLOTH?)(3A)(WASH? OR CLEAN?)
L3         17728 S L1 OR L2
L4       1975302 S DETERG? OR SOAP? OR SURFAC? OR (USE OR STOCK)()(SOLUT? OR SOL
L5          1147 S L3 AND L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX?
L6           180 S L5 AND (INJECT? OR PRE()SPOT? OR SPRAY?)
L7             7 S L6 NOT P/DT
L8          1378 S L3 AND L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX?
L9          1371 S L8 NOT L7
L10           98 S L9 AND (L1 OR WASH? OR CLEAN?)(2A)(MACHINE OR EQUIP? OR DEVIC
L11           12 S L10 NOT P/DT
L12           86 S L10 NOT L11

     FILE 'STNGUIDE' ENTERED AT 17:04:04 ON 20 FEB 2002
CHARGED TO COST=0592087

     FILE 'HCA' ENTERED AT 17:11:59 ON 20 FEB 2002
CHARGED TO COST=0592087

     FILE 'STNGUIDE' ENTERED AT 17:12:01 ON 20 FEB 2002
CHARGED TO COST=0592087

     FILE 'HCA' ENTERED AT 17:13:52 ON 20 FEB 2002
CHARGED TO COST=0592087
L13         1273 S L9 NOT L10
L14            3 S L13 AND (AUTOMATIC? OR DOOR)(2W)(DISPENS? OR INJECT? OR METER
```

FILE 'STNGUIDE' ENTERED AT 17:20:25 ON 20 FEB 2002
CHARGED TO COST=0592087

FILE 'HCA' ENTERED AT 17:21:54 ON 20 FEB 2002
CHARGED TO COST=0592087
L15 1270 S L13 NOT L14
L16 0 S L15 AND SIMULTAN?(2A)(DISPENS? OR FILL? OR INJECT? OR METER?
L17 18 S L15 AND SIMULTAN?

FILE 'STNGUIDE' ENTERED AT 17:23:57 ON 20 FEB 2002
CHARGED TO COST=0592087

FILE 'HCA' ENTERED AT 17:25:35 ON 20 FEB 2002
CHARGED TO COST=0592087

FILE 'STNGUIDE' ENTERED AT 17:25:38 ON 20 FEB 2002
CHARGED TO COST=0592087

=> fil hca

FILE 'HCA' ENTERED AT 17:27:36 ON 20 FEB 2002
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

CHARGED TO COST=0592087

FILE COVERS 1907 - 14 Feb 2002 VOL 136 ISS 8
FILE LAST UPDATED: 14 Feb 2002 (20020214/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

The P indicator for Preparations was not generated for all of the CAS Registry Numbers that were added to the CAS files between 12/27/01 and 1/23/02. As of 1/23/02, the situation has been resolved. Searches and/or SDIs in the H/Z/CA/CAplus files incorporating CAS Registry Numbers with the P indicator executed between 12/27/01 and 1/23/02 may be incomplete. See the NEWS message on this topic for more information.

=> s l3 and l4

L18 11513 L3 AND L4

=> save temp l18 gohl/a

ANSWER SET L18 HAS BEEN SAVED AS 'GOHL/A'

=> d his full

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     (FILE 'HOME' ENTERED AT 16:46:31 ON 20 FEB 2002)
CHARGED TO COST=0592087

     FILE 'HCA' ENTERED AT 16:46:44 ON 20 FEB 2002
CHARGED TO COST=0592087
L1         15939 SEA PLU=ON  LAUND?
L2          2117 SEA PLU=ON  (GARMENT? OR CLOTH?)(3A)(WASH? OR CLEAN?)
L3         17728 SEA PLU=ON  L1 OR L2
L4       1975302 SEA PLU=ON  DETERG? OR SOAP? OR SURFAC? OR (USE OR STOCK)(W)(SO
                 LUT? OR SOLN# OR LIQ?)
L5          1147 S L3 AND L4(3A)(METER? OR MEASUR? OR DISPENS? OR BLEND? OR MIX?
L6           180 SEA PLU=ON  L5 AND (INJECT? OR PRE(W)SPOT? OR SPRAY?)
L7             7 SEA PLU=ON  L6 NOT P/DT
                 D TI 1-7
                 D
                 D BIB ABS 3
L8          1378 SEA PLU=ON  L3 AND L4(3A)(METER? OR MEASUR? OR DISPENS? OR
                 BLEND? OR MIX? OR INJECT? OR PRE(W)SPOT? OR SPRAY?)
L9          1371 SEA PLU=ON  L8 NOT L7
L10           98 SEA PLU=ON  L9 AND (L1 OR WASH? OR CLEAN?)(2A)(MACHINE OR
                 EQUIP? OR DEVIC? OR DEV# OR APPT# OR APPARAT?)
L11           12 SEA PLU=ON  L10 NOT P/DT
                 D TI 1-12
                 D BIB ABS 3,11,12
L12           86 SEA PLU=ON  L10 NOT L11
                 D TI 1-10
                 D TI 11-86

     FILE 'STNGUIDE' ENTERED AT 17:04:04 ON 20 FEB 2002
CHARGED TO COST=0592087

     FILE 'HCA' ENTERED AT 17:11:59 ON 20 FEB 2002
CHARGED TO COST=0592087
                 D BIB ABS 4,6,7,9,16,19,22,32,35,48,50,57,58,84,85

     FILE 'STNGUIDE' ENTERED AT 17:12:01 ON 20 FEB 2002
CHARGED TO COST=0592087
L*** DEL       0 S L9 NOT L10

     FILE 'HCA' ENTERED AT 17:13:52 ON 20 FEB 2002
CHARGED TO COST=0592087
L13         1273 SEA PLU=ON  L9 NOT L10
L14            3 SEA PLU=ON  L13 AND (AUTOMATIC? OR DOOR)(2W)(DISPENS? OR
                 INJECT? OR METER? OR PUMP? OR SUPPLY? OR ADD? OR SPRAY? OR
                 DISPERS? OR DISTRIB? OR PORTION? OR DISCHARG?)
                 D TI 1-3
                 D BIB ABS 1-3

     FILE 'STNGUIDE' ENTERED AT 17:20:25 ON 20 FEB 2002
CHARGED TO COST=0592087

     FILE 'HCA' ENTERED AT 17:21:54 ON 20 FEB 2002
CHARGED TO COST=0592087
L15         1270 SEA PLU=ON  L13 NOT L14
L16            0 SEA PLU=ON  L15 AND SIMULTAN?(2A)(DISPENS? OR FILL? OR INJECT?
                 OR METER? OR PUMP?)
L17           18 SEA PLU=ON  L15 AND SIMULTAN?
                 D TI 1-18

     FILE 'STNGUIDE' ENTERED AT 17:23:57 ON 20 FEB 2002
CHARGED TO COST=0592087

     FILE 'HCA' ENTERED AT 17:25:35 ON 20 FEB 2002
CHARGED TO COST=0592087
                 D BIB ABS 1,17

     FILE 'STNGUIDE' ENTERED AT 17:25:38 ON 20 FEB 2002
```

CHARGED TO COST=0592087

FILE 'HCA' ENTERED AT 17:27:36 ON 20 FEB 2002
CHARGED TO COST=0592087
L18 11513 SEA PLU=ON L3 AND L4
SAVE TEMP L18 GOHL/A

FILE HOME

FILE HCA

FILE COVERS 1907 - 14 Feb 2002 VOL 136 ISS 8
FILE LAST UPDATED: 14 Feb 2002 (20020214/ED)

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FILE STNGUIDE
FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Feb 15, 2002 (20020215/UP).